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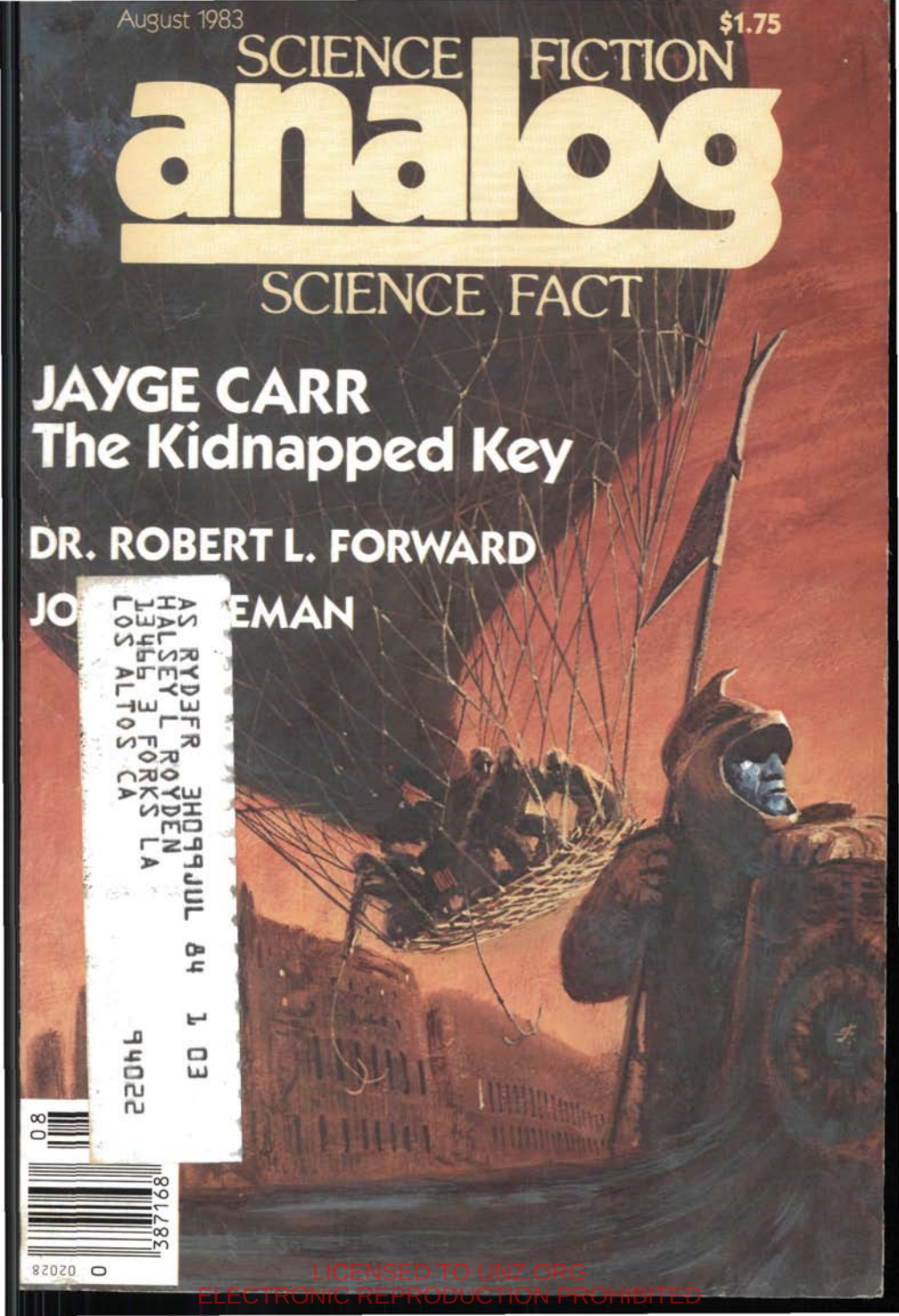

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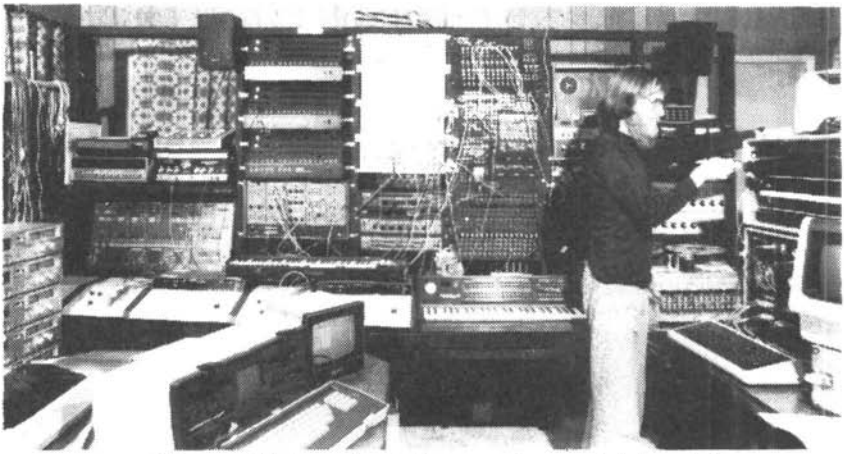

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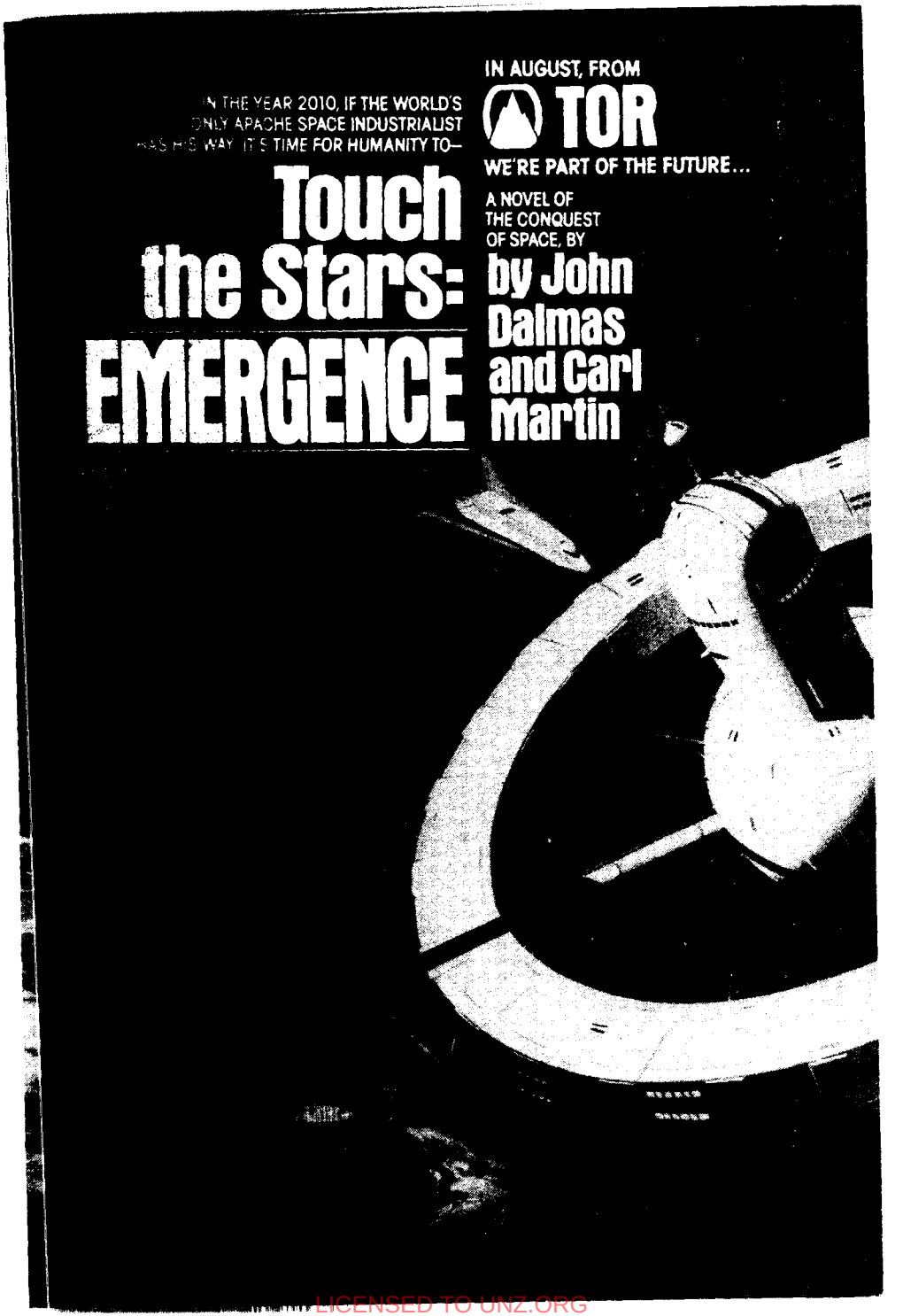

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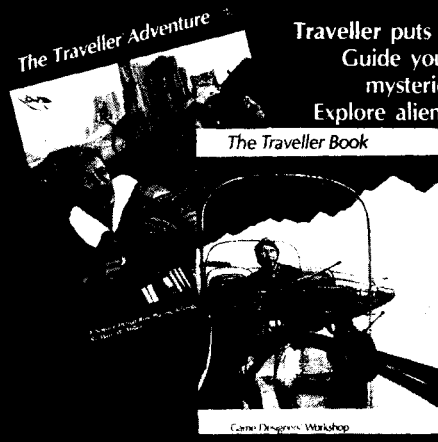

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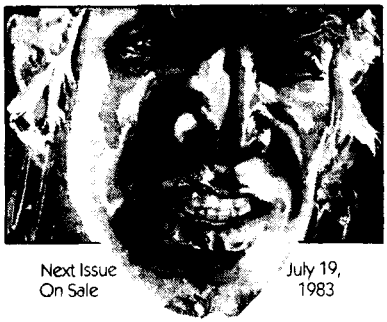

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Editorial

WORD GAMES

Stanley Schmidt

A predictable part of the social pendulum swing we are currently undergoing is a flurry of efforts to reintroduce more or less formalized prayer into public schools. The "front door" to such practices having been closed (at least for now) by the well-known Supreme Court ruling of some years back, proponents of "prayer minutes" have shown admirable ingenuity in finding back doors and holes which can be enlarged and crawled through. One approach being tried in some places is simply saying that prayer will be "voluntary," though time will be set aside for it. A subtler ploy rationalizes, "The Supreme Court won't let us designate time for prayer, but we can surely have a silent minute for meditation. If a student chooses to interpret that as 'prayer,' that's his decision."

Yeah.

Remember what grade school was like? If the majority of a room full of third graders are using that minute to pray—or want their neighbors to think they are—they're going to compare notes. And you know as well as I what's going to happen to the kid who doesn't want to pray in the fashionable way (or at all) and has a sufficiently developed conscience that he doesn't want to lie about it.

The notion of voluntary but institutionalized school prayer is nonsense. It is a contradiction in terms. The people who want institutionalized prayers in schools know very well that "peer pressure" among grade-schoolers is so po-

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tent that "voluntary" prayer will serve their purposes at least as well as the "compulsory" kind. Anybody who is *really* interested in voluntary prayer—as distinct from dictating other people's most personal decisions—needs no new or special legislation. Anyone with a sincere desire for prayer *per se* can pray privately, any time, anywhere, under *existing* laws. No special dispensation from other people—or attempt to make others share the experience in the same way at the same time—is needed.

The value of prayer, or even whether it belongs in school, is *not* the issue here. Whether something so intensely personal should be mandated and regimented is only part of the issue. No less important is whether adults responsible for educating children should subject them to such subtly devious word games as calling something "voluntary" while counting on social pressures (which they might better try to educate away) to make it, in effect, compulsory.

Since truly voluntary prayer is already fully provided for, and the kind now being legislated back into our midst is not truly voluntary, the motives of those pushing for this legislation look more than a little suspect. For people who consider individual liberty important, even if they are themselves firm believers in prayer, this sort of "compulsory voluntarism" seems a decidedly insidious threat. It seems, almost too obviously to need debate, a Bad Thing, to be fought with all possible vigor before it gets out of control.

Or is it?

I almost wrote this column several months ago, when I first started hearing about reviving "voluntary" prayer in schoolrooms. I wanted to point out how absurd that notion was, but before I could put pen to paper, Art Buchwald did it in a way I couldn't hope to improve on.

So I dropped the idea—but since then I've thought of a few angles Buchwald didn't cover. I still find the idea disquieting; it's unnecessary and it does weaken the separation of church and state. It's not really such a drastic thing in itself, but it is potentially a first step down a road I would rather see us steer well clear of. I still find it hard to believe that proponents of "voluntary prayer minutes" are so naive they really believe there is anything voluntary about what they're proposing. I think most of them know what they're doing.

However . . .

Ideally, everything done in a school should have educational value—and I think prayer minutes will, though in a quite different way from what their advocates have in mind. The real, lasting, educational value of an experience is not always what the teacher thinks it is and intends it to be. I think, for example, of how I learned to speed-read, a skill which is now indispensable to my work as an editor. I learned it in school, but the class I learned it in was called "Social Studies." The strict but kindly lady who taught it probably had no idea she was teaching speed-reading, but she did provide a key part of the circumstances which caused me to learn it. My best friend, who sat next to me in that class, had a larger allowance and therefore a larger science fiction collection than I did. He would not loan his books and

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magazines out, but was willing to let people read them in his presence. I taught myself to speed-read so I could read an entire novella in a borrowed *Astounding* during a single period of Social Studies—while paying enough attention to the class to avoid incurring the teacher's wrath and getting my friend's magazine confiscated. And I now make far more direct use of the speed-reading than of the social studies I learned in that class.

What educational value do I see in letting a once-banished practice sneak back into the classroom? Well, consider that oddball student who stands up when the class is told that "It's prayer time," but does not want to pray or pretend to pray in the way done by most of his fellows. He may be a Jew among Christians, a Christian among Moslems, or a fellow who just hasn't attached himself to any organized religion and may or may not do so in the future. It doesn't matter. Chances are he is going to be coaxed, teased, ostracized, and quite possibly beaten up for his stubbornness in clinging to his own beliefs and refusing to profess somebody else's to keep the peace.

That's the kid who's going to learn a valuable lesson from all this. At the very least, he's going to learn the lesson summed up by the young teacher's attorney in Jerome Lawrence and Robert E. Lee's play *Inherit the Wind*: "I understand what Bert's going through. It's the loneliest feeling in the world—to find yourself standing up when everybody else is sitting down. To have everybody look at you and say, 'What's the matter with him?' I know. I know what it feels like. Walking down an empty street, listening to the sound of your own footsteps. Shutters closed, blinds drawn, doors locked against you. And you aren't sure whether you're walking toward something, or if you're just walking away."

That kid who must go through the communal moment of "voluntary" prayer, and chooses to pray differently

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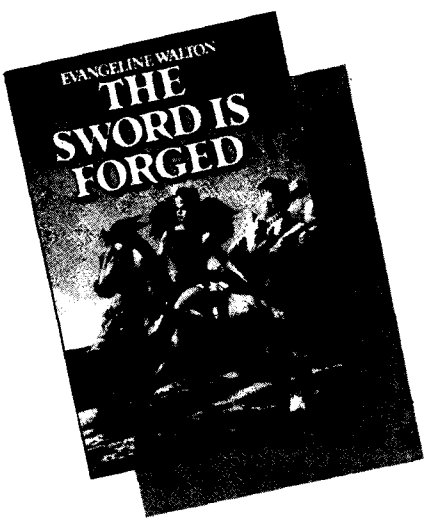

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or not at all, is going to learn that human beings can be intolerant and cruel toward those of different views. He is going to learn that this is no less true of people who talk a great deal about freedom and love and other nice-sounding words, and so he will learn about the reality and ubiquity of hypocrisy. He will learn that it is a great deal easier and more comfortable to pretend to go along with the crowd than to maintain and defend what his own honest judgment says is right.

And—if he is very lucky—he may also learn that, despite the difficulties, the latter is the wiser and more rewarding course. But getting that far will take luck—or help. Some browbeaten individuals with unpopular views will learn that lesson on their own, even though most of the short-range evidence is against it. But I would like to believe that the same teachers who are compelled to schedule these "minutes" will also be permitted, if not required, to talk freely about the issues they raise. For those students not so blessed, I can only hope they will have trusted relatives or friends on the outside to bolster their confidence that it *is* worthwhile to develop and then stick to their own philosophies, regardless of social pressures.

We've always needed people who could do that, and we're not going to need them any less in the years to come. If pseudo-voluntary prayer requirements provide small-scale chances for people to practice openly professing an unpopular viewpoint and learning to live with the consequences, then maybe, in the long run, they will help those same people develop the courage to take and hold an unpopular stand on bigger issues in later life.

And if that's the case, the real problem here may not be, "How can we stop this insidious threat to freedom?", but "How can we provide a similarly educational experience for the many who go comfortably along with the crowd?"

Whose *need* for it just may be even greater. ■

● Economic interests shape the political views of groups and classes. Neither reason nor moral considerations override these interests. Individuals may be converted, they may surrender their special privileges, although this is rare enough, but classes and groups do not do so. The attempt to convert a governing and privileged class into forsaking power and giving up its unjust privileges has therefore always so far failed, and there seems to be no reason whatever to hold that it will succeed in the future.

Jawaharlal Nehru

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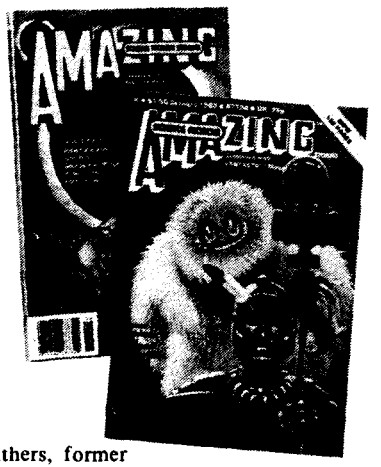

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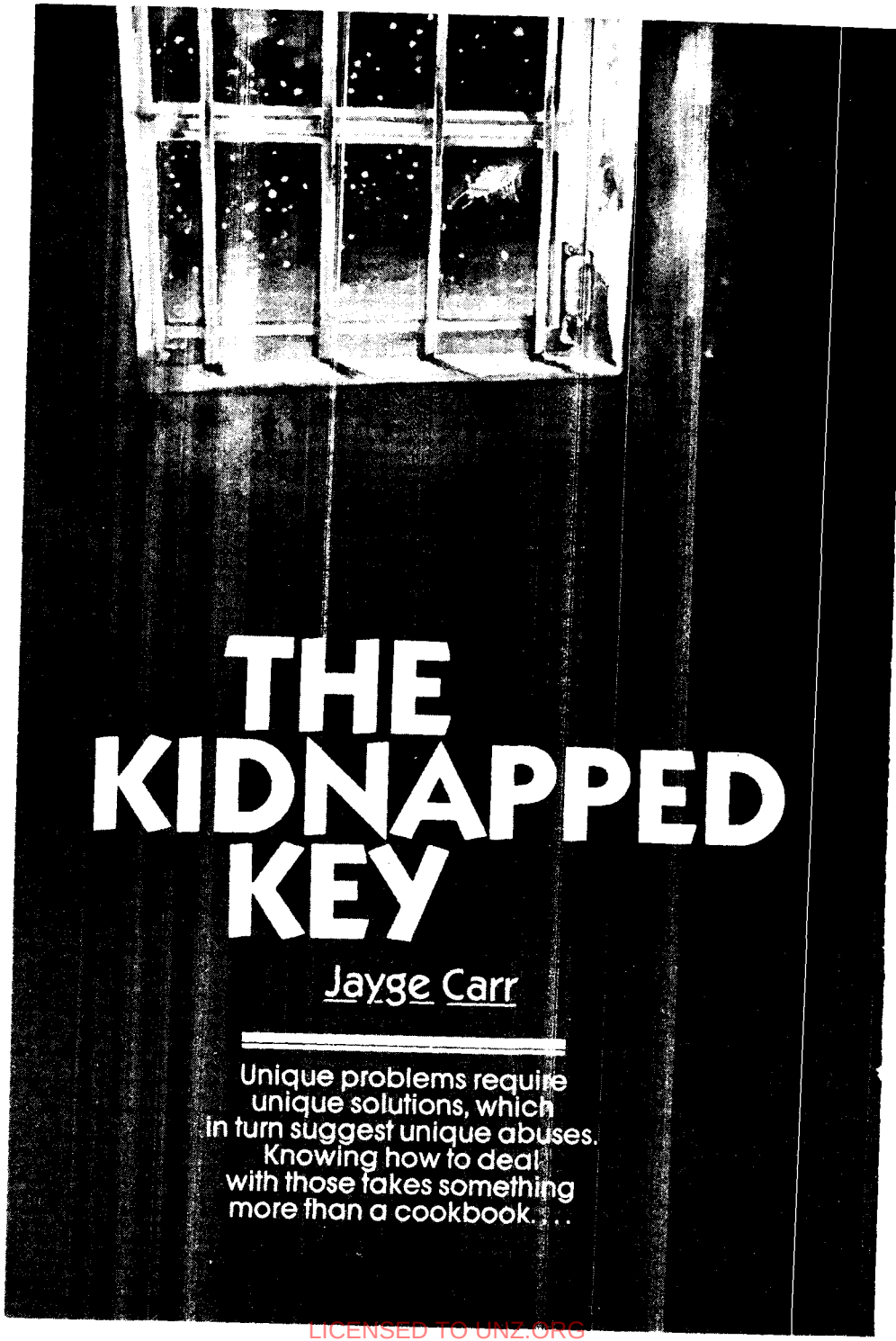
THE KIDNAPPED KEY
Jayge Carr
Unique problems require unique solutions, which in turn suggest unique abuses. Knowing how to deal with those takes something more than a cookbook. . .

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Va Artifact

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The locked shutters of the single window were pierced with baroque carvings so that when Randall knelt, chain taut, on the hard cot to stare out, tiny exotic animals sailed slowly up his arms and across his scarred, yearning face.

The hinges on the thick door groaned when it opened. Randall didn't bother to turn. He knew who was there and why he'd come.

"Change your mind yet, pariah?" The voice was genial today. Some days it was angry, some frustrated, or domineering, or even monotone, almost impassive. Today it exuded friendship. Randall shrugged inwardly. It didn't matter. His universe was the window and what lay outside. It stopped at the walls that imprisoned him, the chain, the door that led nowhere, the jailer who changed personas as another might change his clothes.

The jailer's footsteps were light; soft-soled shoes over the smooth synthi floor with its elaborate design of enlaced floral motifs. Randall registered the approach with one part of his mind. but no muscle moved to acknowledge it. It didn't matter. He remained as he was, eyes outward, cheek dented against the inner frame of the thick window, the only sign of life the slow rise and fall of his chest beneath the thin knit of the by-now grimy shipsuit.

"Why do you do this to yourself?" The voice was close now, kind, soft, pleading. "You'll give in eventually; why not now, and save yourself grief."

Randall said nothing. As far as he was concerned, it had all been said.

The jailer knelt, examined Randall's left ankle, where the manacle padded with expensive silkeen held him firmly but not too tightly. In the early days of Randall's captivity he had chafed against his bond, and had rubbed a sore that had rapidly infected. He had said nothing, of course, to his captors, and it might well have gotten beyond their controlling had one of them not noticed the ugly seepage from beneath the manacle. The circlet had been rapidly transferred to his other ankle, this time with padding, and the sore had been treated. His ankle was well now, the other one held softly, without the risk of another irritation.

He wasn't grateful.

The jailer stood, satisfied. "Are all pariahs as stubborn as you?" His voice was still kindly and richly genial.

Randall shifted his position infinitesimally. If he held his head in the corner of the window and stared out at an awkward angle, he could see the daytime star that wasn't a star. But as it moved through the sky with its gaudy display of aurora, he had to keep shifting to follow its flight. Soon it would be too far, and he would lose sight of it completely for another day.

"No," the jailer knew what he had been watching, "they haven't left . . . yet. But they will." Randall held his breath, without even realizing he was doing it. The jailer's shrewd eyes saw, and his mouth smiled grimly. "Soon," he said, all the while watching, watching, "and then it will be too late for you. Why not do what we want, and you can leave with them, no harm done."

No harm done! Randall didn't move, didn't say a word; but his body language screamed total rejection.

"Pariah," the jailer put a compan-

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ionable arm around the stiffly held shoulder, "why torment yourself. You will give in, eventually, so why not now, before it's too late. I've grown to know you, in these weeks, perhaps better than you know yourself. No man, no matter how determined, can hold out indefinitely. Such a simple thing." His voice was richly persuasive.

But Randall continued to deny existence to anything but the window, the crackling, flashing sky—and the star that wasn't a star.

"We haven't lost *all* the old arts," the jailer said quietly, just before he left. "Think about it."

It wasn't the first time Randall had heard that particular threat. But if he was thinking about it, there was no sign to show the jailer that his shaft had gone home.

They had trapped him simply enough. The wombships, those travelers of the long slow voyages between the stars, came at intervals, two local years, five, ten. Large ships, small ones, but all with their cargos of seeds and embryos and medicines and technology. Some worlds took resentfully, some with bitter gratitude, some with eyes averted, trying not to stare at the price paid for the time spent in the radiation-racked depths of space. But resentment or no, aversion or no, after days, months, years trapped in the narrow corridors and confines of the ship, most of its crew simply had to stretch their legs, to see feel hear smell taste the new world spread out before them. Some worlds required their visitors to stay within narrow limits, others welcomed them with elaborate hospitality. This world laid down lines and forbade the voyagers to cross them—but the lines were generous.

Randall's price hardly showed, except for the radiation scars they all bore. He had strolled through exotic streets, eyes flickering from Moorish wrought-metal balconies to peacock-brilliant murals sprawling from building to building; from women so heavily veiled even their eyes were hidden in shadow to lithe men striding along, their beards beribboned, oiled, braided in a thousand fantastic configurations. Spicy scents warred with sweet, voices commingled half a dozen local accents. It was as if he didn't exist to the bustling inhabitants, and he gloried in it all: the newness, the differences, the space, the freedom. He had left the field with a group of a dozen or so, but gradually, by one and by two, they had drifted away, attracted by a lace-maker, an artist, the beckoning smells of an outdoor cafe, until Randall was alone, unremarked (he thought) by the inhabitants, just enjoying himself.

He'd had no warning whatsoever. The extra sense that some wombshippers developed to warn them of danger or threat had stayed quiet.

The lure had been a child, running and crying. The small figure cannoned into him, screamed, and then ran on. He started to shake his head, smiling, and walk on, but something in the child's screams—terror?—made him bite his lip and start after the child and its pursuers.

Children were too rare aboard the wombships to be other than coddled, indulged, protected—it was almost instinct in him—and there had been an

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element of panic, hysteria in the child's screams.

The child had turned and turned again—Wheel, but he was fast. Randall could hear but no longer see—he pounded through an alley so narrow his clothes caught on the buildings on either side, his legs pumping, fear a bitter taste in his mouth.

He spewed out of the almost blind passage and skidded to a halt, jaw dropping. In front of him was an intersection, and in the center heaped high wreckage, flames shooting out of it as some sort of organic fuel caught fire, limp bodies draped out of windows in the crushed vehicles, and the sounds of moans and feeble pleas for help. Instinctively he flung an arm over his eyes, already running toward the heat that seared his face, to try to snatch any still living from that pyre of death.

"That's what your friends are going to see," said a voice behind him, rich with satisfaction. And then the blow on the head erased the by now blazing human bonfire—and everything else—from his senses.

"They think you're dead." He had been told that, over and over, and he believed it. Why not. Besides, he had felt, with that erratic psi talent of his, the sadness and shock. He had felt them, but they could not distinguish his mind amid the ocean of the mudsiders' minds. Even if they had been looking, they might not have been able to find him. And why should they search, when they thought he was dead. When the time came, they would leave. Sadly. But leave. And he would be completely at the mercy of his captors. If they had any mercy.

He hadn't asked if the people caught in that holocaust of flame had been dead or alive when placed there. Even if he could have trusted their answer, he didn't think he wanted to know.

What they wanted was simple, really. He was a wombshipper, he was psi, he had mindpowers that mudsiders, the planetdwellers, had never developed, he could pass through protections and wards, fool guards that would capture or fry ordinary humans, sense with his unhuman pariah senses where the dangers were, how to pass or neutralize them. He could get into a highly protected *citadel, shut down its protections, open* it for his followers. He could—

Well, he could. Maybe. But he wouldn't.

If there was one rule the wombshippers had beaten into their psyches from birth, it was *Don't Interfere*. He didn't know what the people who had captured him intended to do once they got into this guarded vault, but he could guess. A coup d'etat. Revolution. Overthrow. Inside were weapons, rulers, whatever. Something important inside, and the mass of people outside. And he the unbalancer, the wild card that could topple all plans.

Except he wouldn't.

She was the loveliest creature he'd ever seen, and totally terrified.

Randall had been at his spot by the window, but when the hinges groaned and he heard the hesitant footsteps, the labored breathing, he'd turned slowly. She wasn't naked, but the sheer lacy draperies were far more enticing, far

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more seductive, than simple nudity. Only her expression spoiled the picture. She was so pale he could almost watch the blood flowing beneath her thin skin. Her eyes glazed in shock.

Randall leaned back against the wall, hands limp along his bent knees, and spoke his first word for many days. "Bribery?"

She took a tentative step toward him, breath shuddering in and out.

"Bribery," he repeated, mouth twisted in disgust. "Well, tell whoever sent you it won't work. They could produce Lorelei of the Hundred Days and it wouldn't work." The sneer deepened. "Besides, look at you. So terrified of the evil womber you can't even walk!"

"Are you—" She had to force it out—"really a womber?"

"Quite. Can't you see my horns and tail?"

She licked her lips and took another step. "Please—"

"Go. It won't work. Get out." He turned back to his window, smooth marble-like frame cool against his cheek.

"Please!"

He whirled, suddenly furious. "You can have your choice, fem. I can take what's offered, and then tell them to go drop down the chute, or I can repeat what I said—leave *now*. Either way, I say no and that's final."

"They—they'll beat me." Her eyes were shining with tears, huge, subtly sloe-shaped, and the deepest blue he'd ever seen.

"Try and fail, don't even get close enough to try, I won't and that's final. At least this way I'm sparing you the ostracism of being a pariah's woman."

"You *look* human," she spoke softly, as though making a discovery. "Except for the blots on your skin."

"Radiation scars." He shrugged. He was used to them. So that her skin, velvet-smooth as it was, looked wrong somehow, bland and featureless, so different from the scars he had grown up seeing.

"Look, fem." His voice was harsh. "I'm very human in one way. Stay here much longer, dressed like that, and I'll prove to you how very human I am. You've been warned. Get out."

"I must stay."

"Then take the consequences. But understand this: it won't make any difference. If they torture you to death in front of me, I won't do what they want. Tattoo it on your heart if you have to, or on your forehead—just believe it. I won't. Understand?"

"Yes." She swayed toward him, lace whispering age-old secrets against her graceful figure.

"You think I'm just saying it," he glared down at her. "But it's true. Whatever we do together, it stays true."

"I have to stay."

The chain hampered him at first, but then he forgot it entirely.

She came every day for four days, and then it was the male jailer again, and no word or hint of the woman. He didn't ask, and the jailer didn't volunteer.

The wombship left fifteen local days later. They didn't tell him, but one day it didn't appear in the sky, and he knew it had accelerated out of orbit, to begin the long journey to the next inhabited planet on the circuit.

* * *

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The woman came again some number of days later. He had stopped keeping count; it didn't matter with the ship gone. His current plan of escape was by practicing his psi. If he could just manage a teleport—the power of moving one's own body instantaneously through space—he could leave his chain behind. He hoped. There were few, very few erratic teleports aboard the wombship. Some took their clothes with them when they 'ported; some did not. If he could get free of the chain, even if he only went across the room, it would be a beginning. If he could teleport, he wasn't that high off the ground, and walls were meaningless to a teleport. Walls, space, distance, obstacles — trouble was, teleportation was too new a mindpower, too undependable.

Worse, he had never shown any signs of 'port. Telekinesis, yes, he could move objects, though not *through*, but he could move objects without touching them; and telepathy, mindsensing, on occasion. But never any 'port.

When the woman came, he didn't bother to argue. He had never been famed for his chastity, and she was still the most seductive creature he'd ever seen.

Again she came regularly for several days, and then not at all.

Randall lost track of the days, but there was a curious gleam of triumph in his captor's eyes that gave him a thread of worry. Not that he, Randall, was lying back and taking what he was being given. The teleportation attempts were only one of his ploys. He had tried everything he could think of: pretending to be sick, attacking his jailer, even using a broken plate to saw at the chain, until they missed it and took it away from him. But there was really nothing, all the adventure discs he had seen to the contrary, that a man can do when he's chained to a wall with unbreakable metal. Still he tried. And he turned over scenarios of revenge in his mind.

Until one evening his jailer came in, smiling so that Randall could have counted his teeth, and leaned against the half-open door, with such a tangible aura of triumph that Randall felt a frisson run with spider feet up his spine.

It was a *long* silence. The jailer broke it. "Kasha's pregnant."

"Congratulations." Randall was feeling even more bitter than usual. "Is Kasha a human or an animal?"

"A woman." Impossibly, the smile broadened. "And you know her, pariah. Very well."

"I see." Randall drew his legs under him, tailor-fashion, and faced his captor boldly. "You do believe in long-term planning, don't you. Well," a shrug, "I'll tell you what I told her. It doesn't make a particle of difference. Whether I've bedded her, or she's carrying my child, or whatever. You can do what you please to her; it's on your conscience, not mine."

The jailer was a tall, thin, normish male, skin a pale blue, a local mutation; Randall had seen it on perhaps a quarter of the natives during his tourist exploration. Now he buffed turquoise nails on the sleek, velour-like animal-skin tunic he was wearing and smiled knowingly. "Or to the child."

Randall flinched just slightly before he could control himself. In a voice he tried to make firm, "Or to the child."

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"But *I* wouldn't harm a child." The voice was suspiciously bland. "In fact, I intend to do . . . nothing." Amusement fluttered in voice, face, body, like a caged bird beating desperate wings against too-solid bars.

The chain was short. Randall shifted himself unobtrusively toward the end of the cot where the chain was bolted to the wall, to give himself as much slack as possible. "Are you going to tell me exactly what's going to happen, or are we going to play guessing games until I figure out whatever joyous tidings you came here to tell me?"

"Oh, I'll tell you." Far too genial. "I'll tell you." He strolled in, languid, a man with all the time in the world, and perched himself comfortably on the elegantly simple stool drawn up by the equally elegantly simple table. "After all," cat flicking a yellow feather off his chops, "you should have a voice in Kasha's decision, since the child is undoubtedly yours."

"So you say," Randall shrugged.

"I've no need to lie." He thrust his hands in his pockets, stretched back against the table edge. "The child is undoubtedly yours."

"Or yours. Or—"

He stiffened, then relaxed with a smile. "Impossible. I'm sterile, you understand. And besides, no one else has had Kasha."

"So you *say*," Randall repeated.

"Untrusting geld, aren't you. It doesn't matter, anyway. Kasha, as I mentioned, has a choice. She can run off to the wilds before she starts to show, and hope to survive. Not very likely, though. Teams of skilled wilders don't always come back. A woman alone, hampered by her growing pregnancy . . ."

Randall realized, with a sudden flare of glee, that he had managed a psychic hold on the contents of the man's pockets. Now if only there were the keys to Randall's chain in the pockets—and the man removed his hands—to make a gesture, say—

"No," the man ran casual fingers through stiff spikes of almost magenta hair, then leaned back, elbow on the table, "I don't think Kasha will choose almost certain suicide. Though you might urge her to—considering the alternative."

Randall was probing the now handless pocket with the fingers of his mind, sweat standing out on his forehead, an acrid reek in his nostrils from the effort. He realized a silence had fallen, played back his captor's last words, and managed a careless shrug. "An alternative, you said. And that is—"

A twitch of the mouth. "The maternity ward. Until the baby's born."

"And after?"

Gently. "Do you really want to know?"

"You really hate pariahs, don't you. Must she say it's a pariah's child?"

"Proc, but you're ignorant!" the man burst out, then, regaining control, "Whatever she says, it won't make any difference. Kasha'll come back, eventually. The baby—" A deliberate pause. "—won't."

Randall couldn't help biting his lip. Then boldly, "You set this situation up. You hold all the blame, not I."

"Pariah," the man smiled ferally, "you'll learn, when you're desperate enough . . . shall I send Kasha to you?"

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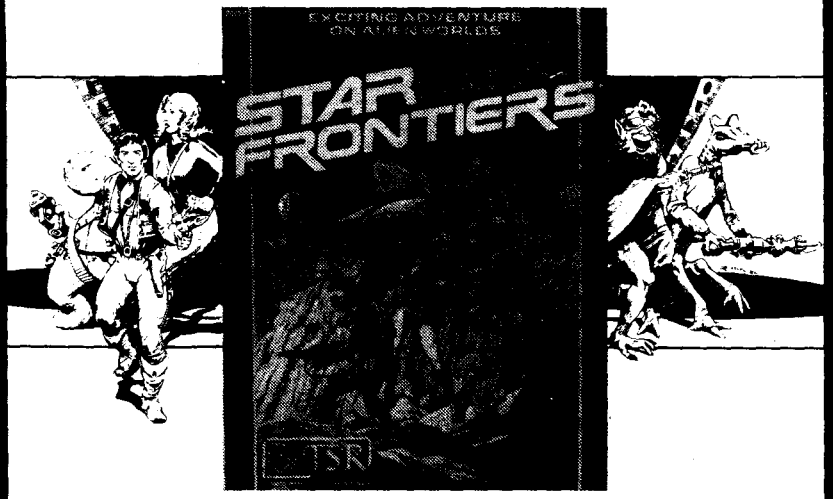

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"No." Mental fingers tightened, slid slowly out of a pocket.

"She won't cry all over you. She accepted the risks."

"No." Randall was trying for total impassivity. "She thought I'd give in. I won't."

The jailer's lip curled. "I think, when you've considered the alternatives—you will."

"You still don't understand us wombshippers. I can't. It's one of our most basic rules. Never meddle."

"You've already meddled. You've fathered a child."

A shrug. "So? Any man can do that."

The other man rose suddenly, turned away. "I'll send in Kasha."

"If you please." Randall stretched in an elaborate yawn.

In the shadow of the stool, a slim pastel rectangle seemed a flame, a lure to catch the eyes.

But his jailer simply walked out, throwing a farewell over his shoulder, oblivious to the small piece of his property that remained behind.

Kasha wasn't crying, but Randall immediately believed that she was pregnant. There was a proud glow about her, a female smugness that shouted her "secret" to the world.

"I hear," Randall's voice was dry, "that I'm to congratulate you."

The glow dimmed infinitesimally. "Aren't you *happy?*"

"I can't like being a prisoner," he said. "I don't see what difference your condition makes to that."

She collapsed onto the stool, looking very young and vulnerable. "You didn't agree."

"No."

"But—I'll have to go to the maternity ward. They'll—" She shuddered.

"I told you. *Whatever* happened to you, won't make any difference."

"You'd let them do *that*. To your own child!" She stared at him, mouth twisted in disgust. "What kind of things are you pariahs, anyway?"

"The same kind of things who'd do whateveritis," he shrugged.

"But—it's your child. Won't you protect it?"

"No." He smiled. "Come here."

She believed him. Her lips quivered, and tears slipped down her childishly screwed-up cheeks. "What for?"

He opened his arms, smiled widely. "We've been given time, why not make use of it?"

"OH! You—"

"I'm a man, pariah or no—" he made a beckoning gesture, still smiling, "—and you're as satisfying a bundle as I've enjoyed in cycles. Why not, sweet mistress. Gather ye ponicbuds while ye may, you know—" There was derision in tone, as well as words that hit her deeply. She sailed to her feet, ran over, her arm upraised to slap. But it dropped limply, and he caught her as she fell.

"Naughty, naughty," he chuckled richly. "But it's as much fun this way as any other, I suppose." He pulled her down on top of himself. And then the rectangle moved, her body and legs shielding it—he hoped—if someone was monitoring. A watcher would see a man taking advantage of a woman, but what Randall was really concentrating on was maneuvering the plastic

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rectangle into the slot in his manacle. One corner of the electrokey—which one, he didn't know, and if he had to try all four—sweat popped out on his forehead again, a vein pulsed as he used weak mental fingers to engage the card in the slot.

Nothing happened.

Out of the slot, a turn of the 'key, and he tried again. And could have howled in relief as, for the first time in over a cycle, the pressure around his ankle eased. Free!

At least of the room.

Kasha had walked through the door without a sound of locking, so maybe there, too—he tried to extend the tendrils of his mind, cursing the unpredictability of his gift. Either there was no threat outside the door—or he was mindblind again.

He leapt from the narrow cot, got halfway to the door, and turned, biting his lip until blood flowed. Small as his chances were, they'd be even smaller burdened with an unconscious woman—

Who was carrying his child.

With a sigh, he turned in his tracks, swooped down, and had her over his shoulder in a fireman's carry before he realized that they were no longer alone.

The blue-skinned man, his jailer of so many days, was leaning against the doorframe, smiling. If he had a weapon it didn't show, but his aura of menace was so strong that Randall involuntarily clenched fists to defend himself.

The native's smile turned down at one corner, cynically. "I won't stop you, pariah. But show your pariah face in the open," his head gestured toward the scintillating sky visible through the carved holes in the shutters, "and you'll beg for death long, long before it comes."

"Your people hate pariahs that much?" It took an effort to lower his fists, to put a hand back up to hold the unconscious body safely on his shoulder. "I'm surprised you leave to others the so pleasant chore of eliminating this one, then."

At which point Kasha stirred, moaning softly. The native eyed her assessingly. "You have weapons that don't show, pariah. You didn't hit her, but you caused her unconsciousness somehow. Why don't you do the same to me, then. There's no one else between you and . . . freedom."

Randall shook his head, laid her carefully on the cot. "I just might. When I understand why you think you've won. Even now, when I could mindstrike you and leave you unconscious—dead, for all you know—you think you've won."

The native laughed merrily. "It could be a bluff."

Randall shook his head. "No. It isn't. You can't bluff a mindsense. You're sure, very sure, and I can sense it. So are you going to tell me what will happen if I mindstrike you and go out that door, with or without this foolish female?"

Kasha moaned again, and the native asked casually, "Is she badly hurt?"

A shrug. "Less than if I'd hit her. More like I administered a mild sedative. She slept almost naturally—soon she'll awaken."

For the first time, the native revealed a hint of anxiety. "And the child?"

Randall bent down and began massaging his ankle. "No harm." He didn't

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look up as he added, "You still haven't answered my question."

The native strolled in, hooked a stool with a casual foot, and plumped himself down on it. "You pariahs must be greatly loved on most worlds. You're so sure of your reception here."

"I've shared minds with brothers being stoned on another world by native mobs, if that's what you mean." For a second, his eyes were bleak, pale and glittering as glacial ice, as he remembered.

"Stoned?" The magenta brows rose and gathered into a frown.

"Maimed or killed by a multitude of hard, thrown objects."

"Whew," a thin whistle. Then, "We're not so—so savage here, pariah. Most likely, you'll be turned over — intact—to the Generator."

The last was obviously a title of some sort. "Your government. Should I fear that, native?"

The native shrugged, still smiling that knowing, malicious smile. "Now how could I know that, pariah. I don't know how pariahs think, what they might or might not fear."

Held this close, Kasha smelt of musk and subtle spices, the olfactory equivalent of her sensuous body and seductive features. Randall wound a thick tendril of silken hair around one finger and said slowly, "Governments are usually reasonable beings. They desire what our people bring more than they wish to risk their displeasure. A wombshipper is usually safest with the government."

"Even if your people have no reason to believe you alive?"

"Your governments are aware of our mindsenses. You can't lie to a mindseer. The talent waxes and wanes in me, but we have those among us who can taste a lie—or an omission—immediately."

"We know that." He was still unperturbed, confident, and Randall felt his own nails digging into his palms. "And has it never occurred to your people that *all* those they come in contact with are deliberately chosen, literally raised in ignorance so your people will not be aware of our secrets. Even aware that we keep secrets " A shrug and a smile. "One more secret on top of the others, what can it matter?"

Randall knew where the argument was leading. "I will not meddle."

"Odd." The native shook his head. "I didn't think you were a coward." He took something out of his pocket and laid it on the table. Randall flicked a quick glance at it. It was an ordinary autoinject ampule, a single, self-administerable dose of some medicine or another. "But there's your alternative to meddling. You may as well carry it with you, but don't leave off using it until too late."

"What is it?" Though he knew.

"Mercy." He laid a second beside the first. "And another of the same, for Kasha." He got up, strolled to the door. "My advice is to wait until after midnight. You'll get a little farther, then."

He favored Randall with one last cynical smile over his shoulder, and was gone.

Kasha sat up, rubbing her eyes.

"I think," Randall knelt beside her, voice and body equally taut, "that you had better tell me everything."

An hour or so later, he was tossing the two ampules of "mercy" up and

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down in one palm and saying grimly, "We'll wait until midnight, then, and take our chances of escaping."

"All right," she said numbly. It was obvious she had given up completely.

He frowned. "If you want me to do something else, I will. Anything but meddle. That I can't."

"Can't—" A flare of anger, lightning spearing through a night-dark sky — "or won't."

He shrugged. "I don't know if I can or not. The senses are erratic at best in me. Your Jan—" he now knew that to be the blue-skinned native's name "— didn't choose the best."

"We hadn't a lot of choice," she muttered.

"It doesn't matter. Won't is won't."

She shafted him with a look of reproach. "Even for the sake of your child—"

"I told you, when the next ship comes, they'll take the child. They always accept crosses, when the native parent is willing to give them up." A bark of sardonic laughter. "Often, the parents can't wait to get rid of the filthy half-breed."

"Oh," unwilling compassion, "is that what you are?"

A shrug. "Many of us. Some worlds would prefer to kill the 'breeds, but they've found out that we always catch them out, and then we won't trade." His mouth twisted. "Or so they think. Truth is, we'll do anything to help a world survive, but natives are short-lifers. No trade for them during their lifetime is the same as no trade forever."

"So—the rumors are true. You are immortal!"

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His laughter had a bitter edge. "No more than you. But at the speeds we travel, to go from star to star, time appears to slow. A paradox perhaps, but time seems somehow related to how fast you travel. Ask a physicist for the details, not a simple analyzer. The result is, that what seems years to you is only tendays to us. And when you realize that many of the crew spend most of the voyage packed away in cold sleep, it seems like no time at all. I was born hundreds if not thousands of your planet's years before you. But in terms of time, real physiological time, the number of my heartbeats, I'm about your age, a little older, a little younger. I could write a program to calculate it, if I were aboard the ship. In what we call stanyears, I'm twenty-six. I don't remember the relationship between your years and a stanyear. Usually they're approximately equal, within, oh, twenty percent one way or the other. Not that it matters."

"No." She reached out and rolled one of the ampules over. "Not that it matters."

"You thought I'd do it, didn't you." It wasn't a question.

"Of course. Any *man* would."

"But then," very quiet, "I'm not a man, am I?" A glance like a fencer lunging and retreating at her smooth stomach.

"Randall." She put a hand on his shoulder.

"You thought," still that acid quietness, "I'd fall in love with you, and hearing all about your wrongs, go charging off to right them."

"No." She was as viciously angry as he was now—and showing it more. "We simply thought you'd prefer to be returned to your ship in the same —condition!—as you left."

"I do." Between his teeth. "Which is why I intend to trust myself to the mercies of your wilds rather than that — that gang of—" he couldn't think of a word vile enough—"that you and your milksop people have allowed to take over."

"How can you know what it's like?" Had her eyes been weapons, he would have been dead. "All you know is that comfortable fat life—"

He laughed loudly. "Ignorance! All I *know*—" He mocked her. "—is that I want only to go back to that 'comfortable fat life.' " He laughed again. "And if I meddle, I can't. That's the rule. The law. Meddle, and I'll be marooned, left, never allowed to go back aboard any ship, abandoned, denied my place always and always—"

She stuffed a fist into her mouth. "You didn't know that, did you," he went on. "This is your world, but never mine. I don't want to stay here, I want to go home! And I won't do anything to jeopardize that!" He swallowed something which might have been, *even if I wanted to*. He took a breath. "I'll risk dying first, in these wilds of yours, and the choice is entirely up to you whether you risk it with me, or stay here."

She stood up, very tall for all her lack of height. "I see. I'll go with you, then."

"And I." Jan uncoiled his length from the doorway.

"You?" Randall was surprised.

"I," Jan nodded. "Haven't you just implied that there are fates worse than

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the risk of death?" He was munching a bulbous chartreuse ovoid. Now he took a noisy bite, chewed and swallowed. "Even for a man." Another bite. "If you consider such as I a man."

"It's you natives who consider the pariahs not quite human," Randall said mildly.

"Natives . . . " Jan choked on a piece of fruit—or knowledge. "You pariahs, you think you're the only real humans, and we—we're only—"

"Natives," Randall laughed. "How quickly parochial attitudes like that grow. All humans, on the wombships and on the scattered worlds, are brothers." A nod to Kasha. "And sisters. It's the planet-bound people on the worlds themselves who won't admit—"

Jan's lip curled, and he bit viciously into the ovoid before saying, "Are you going to stand there and tell me you think *I'm* a man?"

Randall, his nonexistent brows rising, said mildly, "You look like a man to me."

"I'm sterile!" An attack.

A shrug. "So are many of the wombshippers, especially the older ones. Radiation, you know."

"You're not."

A smile at Kasha. "I am among my own kind. That's why I didn't believe you at first, when you said I was responsible for Kasha."

It was Kasha who asked, "It didn't bother you—believing you were sterile?"

"Why should it? Being a man is too many things to worry about one of them. Of course, it did bother me, in a sense. I would have liked to father. It's so hard aboard the wombships, though, that

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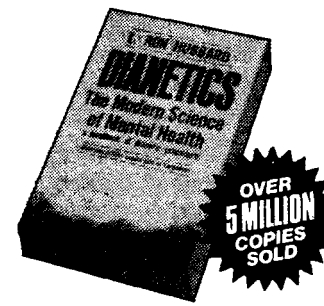

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when any of us is lucky, we treasure our offspring. But I have nursery duty like any other crewmember, and I have my favorites, though we're not supposed to." A smile. "Maybe I didn't father any of them, but a man can love even where he didn't father. They're my children, as well as the children of the others who love them." He looked from Jan to Kasha. "And now I'll never see them again. The chances of being able to catch up with my own ship somehow — I'll try, but the odds are against it."

"You mean we—" Kasha's eyes were moist—"we took you away from your *children?*"

"What difference does it make?" Jan's voice was rough. "You forget what we're fighting for, Kasha?"

"No." She shook her head. "It just never occurred to me, that he'd be fighting for something, too."

Jan shrugged. "We all are now. Fighting to survive until the next wombship comes and we can get him and his child aboard."

Randall caught Kasha's arm. "Suppose you turn yourself in. You said they wouldn't harm you, only keep the child."

"I won't let them." Her mouth was tight. "That's why I've never—"

"They won't harm the child, if they know they'll have to turn it over to the next wombship."

"I told you, they hide things from you almighty all-seeing wombshippers." Jan almost spat it out.

"They can't hide me. If I go into the wilds, and they can't know for sure whether I'm alive or dead, they'd know I'd know as soon as another wombship arrived. They wouldn't dare not produce the child. My child. We'd know. We always know if a substitution is tried."

"They won't worry." Jan shook his head. "Once you're away from the cities, the walled villages—they won't worry. They'll know. You'll be dead, pariah."

"As all three of us will be dead, if we go."

"Probably."

"Then why are you throwing your life away?"

"Why not. My life, my choice."

"You still won't change my mind."

"I know that. Working on you—it's like scratching with an iron bit against a diamond. The bit wears away and the diamond's unchanged."

"I'm glad you finally realize that."

"I do." Jan glanced at the grillework with the auroraed night sky outside. "I have packs for us. We should leave soon, to be sure of being out of the city by dawn."

Randall plucked the ovoid from his hand and took a bite himself. "Why the hurry?"

"Wha—"

Randall took another bite. The pulp was sweet and sour at the same time, and he rolled it around on his tongue appreciatively. "You've kept me hidden here these many tendays. Why then must we leave tonight—"

"You can eat our food!"

"I was getting a little tired of those shipstores," Randall admitted, pale olive-green juice running down his chin. "You haven't much left. How were you planning to feed me, either here or in your wilds, if I couldn't eat your food?"

Jan recovered quickly, though there was a slight flush under his blue skin.

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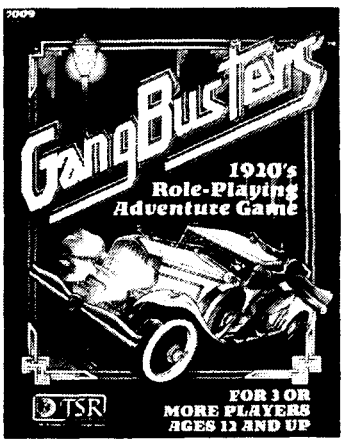

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"*They* have plenty," he said. "I thought you'd agree, and after that we'd either win and you'd be all right, or we'd lose and—" a shrug—"it wouldn't have mattered one way or the other, I'd be dead, and—"

Randall licked his chin. "I'm surprised you didn't think to use that argument."

Jan grinned, unashamed. "I would have, except it was obvious from the first that it wouldn't have done any good. I can see why, now."

"It wouldn't have made a particle of difference, had I been allergic to your native foods and unable to touch a bite."

Sourly. "I believe you."

"Good. And believe this. I won't change my mind." Another bite. "On the other hand, once we leave the city, we would seem to be committed to that course. . . ."

Kasha had been chewing a knuckle, watching each man in his turn as he spoke, like a spectator at a pinpon game. "If you won't change your mind and help us, what difference does a few days' delay make. We have to leave before I show, or there won't be a choice."

"You—" He took another bite, and suddenly spat a couple of dark green pips into the palm of his hand. "—might change your mind."

"About the maternity ward? Never!"

He rolled the pips on his palm, thoughtfully. "No, I was thinking rather about how invulnerable this citadel you wanted me to help pierce is."

"Say it out!" Jan gritted.

"You showed a remarkable ingenuity about kidnapping *me*," Randall spoke slowly, casually. "A similar ingenuity about breaching this citadel of yours might have equally remarkable results."

"Big words, pariah," Jan scoffed. "Born of ignorance. The citadel can't be breached by norms."

"No?" He took another bite. "I'd've said that kidnapping a wombshipper without either the ship or your government twigging it'd even happened was impossible. Except," *very* gently, "you did it, didn't you."

"And I thought you said you'd never meddle." Kasha stared at him, eyes wide and almost luminous with the emotions behind them.

"Meddle?" Randall's eyes were equally wide, bland and innocent. "Perish the thought! All I'm doing is standing here, eating a most delicious fruit, and enjoying a litle idle conversation with the natives whose hospitality has been most generously—and firmly —extended to me."

"Idle conver—" Jan appeared to be having difficulty breathing. But Kasha was staring at Randall, determination mixed with hope in her deep blue eyes. "And if—" Jan glanced at Kasha, "—if I—we—decide to stay here a few more days, can we be assured of another round or two of . . . idle conversation?"

"I believe I know the courtesies due a host as well as any mudsider," Randall smiled, and sprawled casually on the narrow cot. With an easy gesture he pulled Kasha to his side, offering her a bite of what was left of the ovoid. "Eat for two, you know." His expression was as bland as processed soypro.

"Pariah!" from Jan.

"The reason we don't meddle," Ran-

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dall informed, taking another bite himself before offering the small chunk that was left again to Kasha, "is because we know, whether your idiot government realizes it or not, how little we truly understand of the necessities that the natives of each world have adapted to. What seems a monstrous evil to us, a pointless horror, may simply be due to the exigencies of the native environment. Thus we cannot clearly see if the results of our meddling will be good or evil. That," a broad grin, "is right out of the manual. I grew up reciting it. But treat me right," his arm snaked around Kasha and he gave her an enthusiastic hug, "and I can be as friendly as any mudsider. Friendlier than some, eh, Kasha?"

"I may," Jan's words came out somewhere between an angry attack and thoughtful contemplation, "kill you myself yet."

"A waste of energy, if you ask my opinion. But you're a man, after all, and the choice is yours. Just as I make my own choices and Kasha hers. And now — Kasha—a choice. Would you say three's a crowd?"

"But—"

He put a finger on her lips. "We've time. And Jan needs to do some heavy thinking, eh, Jan."

"You—" He caught his lip between his teeth, glared at them while the heartbeats ticked away; and then about-faced with military precision, closing the door behind him with a controlled violence which should have been more startling than a slam, but only made Randall laugh softly before tossing the nub of fruit away and pulling Kasha down toward him.

Randall stared at the pile of drawings scattered over the table, whose surface was an intricate parquet. He pulled out a document bordered in a delicate tracery of intertwined leaves and flowers — and put it back. He couldn't say, he thought, worrying his lip, that Jan had exaggerated the difficulties of getting into the citadel. If anything, he had minimized them.

Worse— He glanced up at his reluctant hosts. "Are you positive all these are accurate?" he asked mildly.

"Yes," Jan snapped. It was Kasha who asked softly, "Why do you ask, Randall?"

He shrugged. He was on a perilously balanced tightrope now. "No special reason," he lied without a qualm, "except it occurred to me that whenever you've discussed your plans, you've relied heavily on these drawings. And—" another shrug—"if any of them should happen to be out of date, or inaccurate for some reason . . . well . . ."

"A barren small chance would be no chance at all, is that what you're saying?"

"You said it, not I." With an effort, he kept his voice cool and noncommittal.

"He's right, though." Kasha caught a scrap of lip between her teeth and worried it. "Jan, we are depending far too much on these drawings."

"You think I don't know it," he said bitterly. "Why did you think we wanted a womber mindseer to help us?"

It was mindsee that told him that some of the drawings were inaccurate. Deliberately so, he was sure.

Without his ordering, his mindsenses stretched out. Not to the drawing, with

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the lines that screamed of lie to his clairvoyancy, but to the real citadel. He saw it, an X-ray, a schematic, a dissection, a whole and each separate part, a tall building, cylindrical, surrounded by a deep moat, guarded in every entrance, in every corridor, by a multitude of humans and wombship high-T gadgets. Men and machines reinforced each other in a pattern that had no real pattern, that would stop or capture any intruder long, long before he or they penetrated to the all-important heart. He saw—knew—the citadel, its corridors littered with patrolling guards, swept by computerized infrared and ultraviolet scans, realized with dismay the elaborate, often-changing web of protections that could be infiltrated only by those authorized, known personally to the guards at various check points, carrying electrokeys and other codes to pass them in.

And not just the building itself was protected. Besides the moat, the ground beneath and around held a nerve complexity of wires and scans and mines and assorted booby traps. Any attempt to tunnel in would be hopeless because a dozen alarms would be triggered, as well as the deadly mines and traps, before the hapless diggers got within half a kilometer of the citadel.

And this was a world of no levos, no flits or copters or planes or flying machines of any sort, which eliminated an attack from above; though from the plans, if someone could get to the roof or high enough on the outer walls, there were vents—Randall amused himself with a sudden vision of Jan shot from a cannon to sail in through one of those high vents—

No good. Even assuming they had something which would shoot a human, and that Jan could be aimed for a vent instead of merely smashing against the outer walls, they couldn't get such a device within range—

"What are you grinning at?" Jan demanded. "Is this funny to you?"

"No," he assured. And then, "On other worlds they have machines which can throw a human being for a large distance. I was thinking it might be *worth thinking about—except they don't* throw that far, and I somehow doubt we could get close enough to have the human land safely."

"Machines which can throw a person—" Kasha patted Jan's shoulder, soothingly, while her eyes urged Randall to keep talking until the volatile conspirator's anger wore off.

"Yes, they're larger versions of a weapon. I'm not sure whether or not your people have the equivalents—if perhaps you could explain—" The diversion worked, with Kasha's help, and by the time they had examined dart throwers, which Jan was familiar with, and he had exclaimed over the clumsiness of ramming a ball of metal down a tube and then spitting it back out with a chemical explosion, and even slingshots, Jan was calm enough to continue the discussion dispassionately.

"You aren't afraid that telling me about these weapons is meddling," Jan commented after a while.

"Not really. You've undoubtedly got records of them somewhere; most worlds develop most types of weapons over and over. Besides, except for the simplest weapons, they require a high level of skill, as well as technology, to produce. Tolerances, exact materials, dimen-

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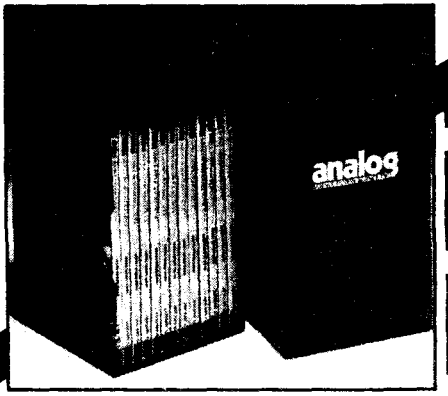

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sions, proportions—even something as apparently simple as a bow and arrow comes in a variety of types, each with a different purpose. Longbow, doubly curved, a single piece of material, laminated, string matched to the strength of the bow, and made out of what—a dozen questions I can't answer, and a dozen more I don't even know enough to ask. And then, even if you have the weapon, it likely takes a high degree of skill to use. Oh, no," he shook his head, "I don't think I've meddled."

"No," Jan watched Randall through narrow slits of eyes, "no. And if I asked you more about the actual making of these weapons—"

A smile. "Didn't you listen to what I just said? I know no more about the actual making of such weapons than I picked up in reading about their usages in history discs. I've never as much as held a real weapon in my life. There are no wild animals aboard a wombship, after all, and crime is fairly uncommon, since there are always mindseers around to pin down the guilty person fairly quickly. Oh, there's violence now and again—" His mouth twitched as he remembered a knock-down, drag-out with a crewman named Esten that had had both of them rolling down a corridor, cannoning into the walls and outraged crewmembers who couldn't get out of the way in time. Person-to-person violence was not exactly encouraged aboard a wombship, but their leaders were shrewd enough to know that closely confined people need a pressure cock; and this was, if kept within reasonable bounds, a comparatively harmless way of letting off steam.

"But wars," Randall went on, "that's just a term in the discs, to me. Premeditated murder, crime, all of that. Mudsider ways. Oh, we have anger and violence, but it's usually impulse. If there's somebody with problems, there are always mindseers to recognize it, and work on the person to calm him down."

"Paradise," Jan sneered.

"No." Randall shook his head. "Just different problems. Crowding, and radiation, and sterility, the stink of people that can never be quite blotted out. Shortness of stores in the longer runs, the disaster of a system breaking down —" He put an arm around Kasha, and spoke soberly, "and with as small a population as most ships have, sometimes you can't find the right partner, that truly fitting other half of yourself." A smile. "Which is why we do trade ourselves from ship to ship sometimes, when two ships meet in orbit." Then he saw something in Kasha's eyes, and wished the last words unsaid.

Speaking carefully, he went on, "It sounds strange to you, I know, and it's even stranger than it sounds. I've seen, read about, too many of your mudsider worlds not to realize how great the differences are. I *can't* live here indefinitely. And—" he stared straight at Kasha—"most mudsiders, all I've ever heard of, they can't live aboard the wombships. They're like plants transplanted from a lake to a desert. They wilt, and then die. If not physically, then in spirit. Which is why we *never* accept mudsiders aboard our wombships."

It wasn't entirely the truth, but he could tell one important fact; his mindsenses were strong enough for that. For

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all her present unhappiness, Kasha's roots on this world were strong. She'd never survive transplanting, and he had no intention of letting her try.

They ate, they slept, they made plan after plan. Or rather, Jan made plans and bounced them off Randall, listening to his cautious comments as though each word were dipped in gold. At what point it changed, Randall couldn't after have said. It was as if Jan had put away his thoughts of penetrating the citadel and was content merely to sit back, letting Randall and Kasha chat, most often in endless commentaries on wombship life and its difference to their own, and the other worlds Randall had visited or knew of from his curious excursions into the wombship's files.

Jan, Randall finally decided, was content to pick the wombshipper's brain. Randall was willing, as long as the topics were harmless. What use could historical information be? It wasn't meddling to tell a native histories of other worlds; in fact, it was something the wombshippers encouraged, to make each world aware of its separated sisters.

"So Calypso is entirely a water world." Jan had a habit of flicking the pointed top of his be-ringed ears. "Fascinating. Its people must be very wet all the time."

"They live on the water, on floats," Randall smiled, remembering. There had been one particular seanymph— "They farm the sea, in the shallows, and fish it, too. And when we were there, some of the children seemed more at home in the water than on it. Our longseers think they may eventually mutate toward gills, the organs fish have that they breathe water with, and then the Calypsons will be able to live in the water as well as on it."

Kasha was, if anything, more interested than Jan. "Trees so large that people live in the tops? How big are they?"

"Huge," he said. "So huge that villages perch in the smaller branches, whole cities in the larger. Below is a phosphorescent jungle, eternal darkness from the leaves above pierced by the lifelight of teeming animal and plant life, vicious, prolific, deadly. The Sequoians never climb below the sunlight; they cultivate actual farms on the giant leaves—"

"A planet where most of the edible plants live in the air—"

"Windharvest. We don't visit them any more. They've developed a religion—" He shivered. "Life is so harsh there—they migrate twice a year, the planet has an extreme axial tilt, the seasons are violent in the extreme. So the people move, following the moderate temperatures, harvesting the plants in the air as they go."

Kasha's eyes, curious. "If the plants are in the air, how can they harvest them?"

"Because they're in the air, too. They make the trips in huge balloons, lighter-than-air floating ships; and as the winds carry them, they use anchors now and then to fasten themselves, let the winds sweep past, and fill their nets."

Jan, with a frown, "Aren't there any worlds where a man can live without killing himself with work and fighting the environment all the time?"

"Plenty." He rose, began pacing around the room that was larger than his original cell, far more elaborately dec-

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orated, and still, in essence, a place of imprisonment. "There's one world I remember where the people have so much excess, they burn their most precious and best, periodically, in elaborate ceremonies. They have an intricate etiquette of giving, and their most mortal sin is selfishness." He stopped, frowning. "And yet, the farseers are worried about that world. They say that the people are slipping back, drifting placidly lower and lower, that eventually they won't be intelligent humans at all, just happy animals." A shrug. "Well, there are worse ways to go."

"Like ours." Jan was bitter.

"If your condition were permanent, yes. But the colonizers wouldn't have chosen this world if it had had such a problem to start with. Granted, they picked worlds even worse, in climate, say; and I believe that some weren't picked, the original ships were wrecks —Windharvest, for example—but my guess is that your trouble wasn't even here when this world was colonized. I suspect that it's a temporary affair, five thousand years, ten—" Another shrug. "Who knows what's causing it. Ask an astro, a cosmo, I'm no specialist. A slight alteration in your sun's interior, something different in your own atmosphere, I can't even guess, it's not my field. But I do think it's temporary. If you can just survive for a time—"

"Temporary . . ." Jan's voice was hollow. "Five thousand years — temporary?"

Randall smiled. "To a universe that has existed for uncounted billions—a blink of an eye."

"That's what you meant," Kasha said slowly, "about the wombshippers seeing things in the long run."

Something crystallized in Randall then. A knowledge. He had thought of Kasha as being caught up in Jan's schemes, a victim, the stereotyped female dragged into something by her male. Her intransigence over the maternity ward should have enlightened him. And during the long talks the three of them had had . . . it wasn't Jan ordering and Kasha obeying. Time after time, without even realizing, perhaps, that he was deferring to her, Jan had done exactly that. If he spoke, and she wanted it also, fine. But if she disagreed . . . somehow, something said in her soft voice, maybe not even seeming directly related, but so logical that Jan would say something, and then she, and soon, whatever she wanted—Randall stared at her. And she looked up and smiled. Slowly.

The wombshippers didn't consider crying unmanly. In the tight confines of the narrow corridors, any buildup of emotion could be dangerous. Randall cried, clenching his fists and beating them against a muraled wall.

Kasha hovered, obviously ready to lend consolation whenever he could bring himself to accept it.

Until he turned on her, eyes red and hot. "Aren't you afraid of me at all?" he snarled, voice raw.

"Yes." She was straightforward about it. "You could kill me, with your hands, or with your wombshipper power. But it wouldn't make any difference."

Again his swollen, reddened fists smashed against a gamboling amber

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dragon, caught forever in a shower of blossoms. "I *should*."

"You don't have to help, you know." Again the calm, matter-of-fact voice.

"Because I already have!" a howl of mortal anguish.

"Yes."

"Meddled!"

"Yes."

"I didn't know!"

"Didn't you?" Her voice was soft, persuasive. "Your rules said, Don't, Randall—but your heart said, *DO!* So—you did. Whether you admitted it to yourself or not, you did. You knew exactly what you were doing, and what you hoped would come of it. You helped, and now we have a chance we didn't have before. Small, true, but we're going to take it. You can make it bigger, help some more, if you want. But either way we're going to try, because you can only lose if you never try. Whatever you do now—"

"Can't make any real difference, because I'm already doomed, is that what you're saying?"

"Randall." Her hand stroked his cheek with infinite gentleness. "You've already meddled, as you call it. You wanted to meddle, whether you choose to admit the fact or not. You told us what we desperately needed to know, you gave us hope when we were ready to despair—"

"I've exiled myself to your world!"

"That, too." Again she stroked his quivering back.

"Manipulated by a deceitful witch!"

"Take it out on me if you want."

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"And afterwards," through tight lips, "I'll help, all the way, as you wanted from the beginning."

"This is your world, too—now. You may as well help make it a decent world to live on."

"Because I'll be spending the rest of my life here."

She didn't say another word. She didn't have to.

"Oh, I'll help all right. All the way. Why not? With any luck, I won't survive your assault on the citadel."

In the end, she consoled him in the immemorial feminine way. But something puzzled him, though he said nothing of it either to her or to Jan. She hadn't said anything aloud, but when he spoke of not surviving the attack on the citadel, he had heard "You will," as clearly as if she had spoken. With the unshakable surety of a longseer, so that he wondered—with that part of his mind free for inconsequentials—if the mind powers cropping up among the wombshippers were also appearing here and there among the mudsiders, too.

The balloon champed and strained against its restraining ropes like an impatient young stallion scenting a mare in heat. Randall examined it with both eyes and mindsenses. It was simple, since they had no science of aeronautics. But it didn't need to be complex. One flight, after all. One rising, as the air was heated and ballast dumped; one journey; one anchoring, just long enough for the small crew to climb down the anchor ropes.

It hadn't been that hard to produce, either. If the primitives of Windharvest could make balloons with nothing but their knives and the scant resources of a grudging world, then Jan and Kasha's people, who had shreds of high technology plus a well-developed culture of their own, could too. It had been the idea they had needed: the concept that a machine, especially so simply produced a construct as a balloon, could rise off the ground and fly. Somewhere along the line they had lost the very thought of flight, perhaps because their world had gliding animals but no equivalent of birds. However it had happened, a piece had been missing, and once Randall had unknowingly supplied that missing piece the rest had followed quickly.

Guiding the balloon would be the trickiest part. Randall and his mindpush would be some help. For the rest, the night had been carefully awaited, the ground winds gentle enough for the launch and coming from roughly the right direction. Controlling their height, via an air valve and heat from a tiny wood stove, would give them some extra maneuvering ability. Randall knew, and had told them, that wind direction could vary with altitude, even the few hundred meters that was as high as they planned to go—just enough to float over the citadel's defenses and plant anchors on its roof—

It wouldn't take long—either way.

There were four men in the balloon: Randall, Jan, and two others, all grim, all determined. Armed with this world's personal weapons: knives, spring-loaded gadgets that spat poisoned slivers of metal, and thin shells filled with a chemical that burst into flames when the shell shattered and spewed the chemical into the air.

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And Randall, the most potent weapon of all. Randall, with his still smouldering fury and power of mindstrike.

The tall broad man who had silently assisted Jan in the early days of Randall's imprisonment spoke softly to the fresh-faced youngster introduced only after the balloon had been completed: "Proc help anybody *he* smashes!"

Randall, hearing with mind rather than ears, agreed. First the minions of the most despicable ruling body he'd ever encountered. And then—

The gondola riding beneath the balloon proper was simple, primitive. A rimmed floor of woven lath, stove with insulated legs and pipe up, and a few guy ropes to keep the riders from falling out. The four chosen crew members climbed in, and their helpers prepared to release the ropes.

Kasha was back in the shadows. He knew that. Just as he knew she'd come forward if he wanted, to kiss him goodbye. He didn't. He just wanted to go and get it over with.

Odd though. As the balloon rose, swaying giddily, he *felt* kissed. As though firm young arms had wrapped around his neck and warm perfumed lips pressed sweetly against his own.

It was night, but with his senses spread wide he felt the city flowing by beneath them. The sky was heavily overcast, waited-for overcast, so they wouldn't be seen, a dark silhouette against the usual auroral display. Thick black above, and below the friendly stars of fires and lamps flickering through carved window screens.

"We're on course," he muttered to Jan, as though whether he whispered or shouted like an actor playing to the topmost balcony made a difference.

Jan nodded, but didn't speak. Silence pinned them to the black immovable shield of night; beneath them life and light and the world rushed by.

The larger of the other two men stood stolidly, one hand clamped on a rope, body balancing almost instinctively to the swaying of the balloon. The other held on, too, but slid his dart pistol in and out of its holder with his free hand, eyes reflecting the deep night around them, an absentminded smile curving his lips. Randall tried a light probe of each mind in turn and was satisfied. They'd do.

Randall reached up suddenly and tugged the rope that controlled a primitive valve. Jan's gaze followed the motion and his brow quirked in a question. Randall nodded. "Too high. Getting close. Only—"

"You're the boss," Jan interrupted.

No, Randall thought, *Kasha's the boss*. And again felt soft arms and softer lips.

The citadel was dark, deliberately so. If it hadn't been for his mindsee he wouldn't have known exactly where it was, or even that anything at all was there. As it was, he sensed the mass of it, could have marked on a three-dimensional diagram every human mind within, every techno device and ward. They'd never have a chance without me, he thought grimly, and Wheel knows how small it is even with.

"Be ready," he snapped, and pulled gingerly on the valve again. In his mind he saw it as a display on a computer-generated holoscreen: the balloon approaching, descending, their estimated

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flight path, the winds, their velocity . . . he pulled the valve again . . . lower, slight change in wind direction . . .

The roof of the citadel was flat, merely a weather cover, broken only by a few smoke stacks, vents, and the like. Not another line of defense, just a protection against rain and snow. It wasn't very large, a pin-dot target toward which he was maneuvering a balky, carried-by-the-wind balloon on its—and his—maiden voyage.

"Anchors ready," he snapped.

"I can't see—" It was the youngest, voice taut.

"Throw when I say—get ready—" They were going to pass close—

Close—

Close enough that even the mindblind could see, extend their flight and see how close it passed . . . not close enough . . . a miss . . .

"We're not going to make it!" It was the youngest, howling in disappointment. "You—TRAITOR!" He hurled himself across the tiny gap, his open hand smashed into Randall's cheek with a *kwap* that would have alerted a guard on the roof so near and yet so far—had there been one.

"CURSE YOU ALL!" Mind and body alike responded to the blow, the insult. The youngster hurtled backward, arms flung helplessly wide, as the balloon heeled over and skidded sidewise as if a giant hand had returned the blow—with interest.

Only the large man's quickness and desperate grab and simultaneous grip on the ropes with his other hand kept the victim from flipping over the low rim and meeting the ground—hard.

Randall sucked in air through clenched teeth and flaring nostrils—menace incarnate, spoiling for a—

"Randall," Jan's voice was urgent, "you did it—*look*—" His exclamation broke the spell. Randall looked—and stiffened. The youngster had been on the citadel side. And when Randall exploded— "Anchors ready," he bit out the command. The large man threw himself back to his station, the younger man to his, the two separating as like poles of a magnet suddenly brought together.

A breath . . . two . . . thr—"NOW!"

Four ropes with heavy stones on their ends hurtled downward into blackness, Randall's mindsee following them down—and something he hadn't anticipated, the stones sharing the balloon's velocity, rolling and bumping along the roof. If they went back off, the balloon would—

Randall grabbed with mental fingers, angling a rope so that it caught on a tall chimney, another hooked a wire antenna of some sort—

The balloon jerked, but one of the ropes held. He reached down with his mind, tried to firm them. *That* one seemed fastest; he grabbed it, ordered the other men not to move until he was down and, without waiting for their acknowledgements, flung himself onto the thin tie and began to slide down, a controlled fall almost, hand under hand, legs wrapped tightly around the swaying lifeline, and mind all focussed on the rope's precarious hold on a chimney.

He literally fell onto the roof, caught the anchor stone and pulled, getting enough slack to wrap the rope around the narrowest part of the chimney. And

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then the rope that had hooked on the antenna he tied in a knot, hoping the slender metal wouldn't snap. Two more rocks: one he tied to a gutter that rimmed the roof; under his fingers were carvings, *even the gutters* he thought, momentarily amused. The fourth had fallen completely off the roof and dangled freely; he tried to reach and pull with mental fingers, but the weight of the stone defeated him. He gave up and hoped three anchors would be enough.

He sent up a mental command to come down, adding a warning about the front anchor rope.

In seconds he could sense the three lines thrumming, as his companions hurtled down. Once all were together on the roof, they hurriedly conferred. Randall could not locate an actual access to the roof that they could get through, which made their task harder. But they had ropes, and there were windows, even open vents in the outer walls, though locating them in the dark would have been very difficult for anyone but a mindseer.

Randall paced slowly around the circumference of the roof. They knew, from the diagrams and his mindsurvey, where the likeliest openings were. The trouble was— He probed through a window, and flinched at the number of minds gathered behind it.

Not that one. And not the next, either.

He cursed, as his erratic and overused talent went out like a doused candleflame. Now he was trapped in darkness like the others. There were half a dozen high windows they could reach with their ropes, and he had definitely eliminated two of them. He told Jan in a quick mutter what had happened. The man nodded and asked, "Any chance of it coming back soon?"

A shrug, which Jan must have felt rather than seen. "Who knows. I can just tell you that one of the windows I checked was barred, and there are people near enough to hear if we try to break in. And the other, it's a no-go, people right in the room, dossed out but they'd wake soon enough if we climbed in and tried to go through them."

Jan thought it over, then said softly, "Right, we'll wait a few minutes, see if that mindpower of yours comes back. If it hasn't soon, we'll try the next window, win, lose, or draw."

Randall agreed. "Once they realize we're on the roof—"

One human gesture survives everywhere, in every culture. Jan drew a finger across his throat.

They shifted about on the roof, stamping up and down to keep their muscles from cramping. Until Randall said firmly, "No go. I'm a burnout for now. I pushed too hard, and all I'd really like to do is sleep; I feel exhausted. From now on, it's up to all of us, and luck."

"At least you told us where our blueprints were wrong," Jan said. "We've that help."

"Why not?" Randall couldn't keep the bitterness out. "By then, it didn't make any difference."

"Randall—" He felt the hand on his arm.

Dully, "As Kasha said once, it's my world, now and forever."

"I know it can't make any difference now—but I'm sorry, Randall."

A shrug. Unspoken: *So what?*

* * *

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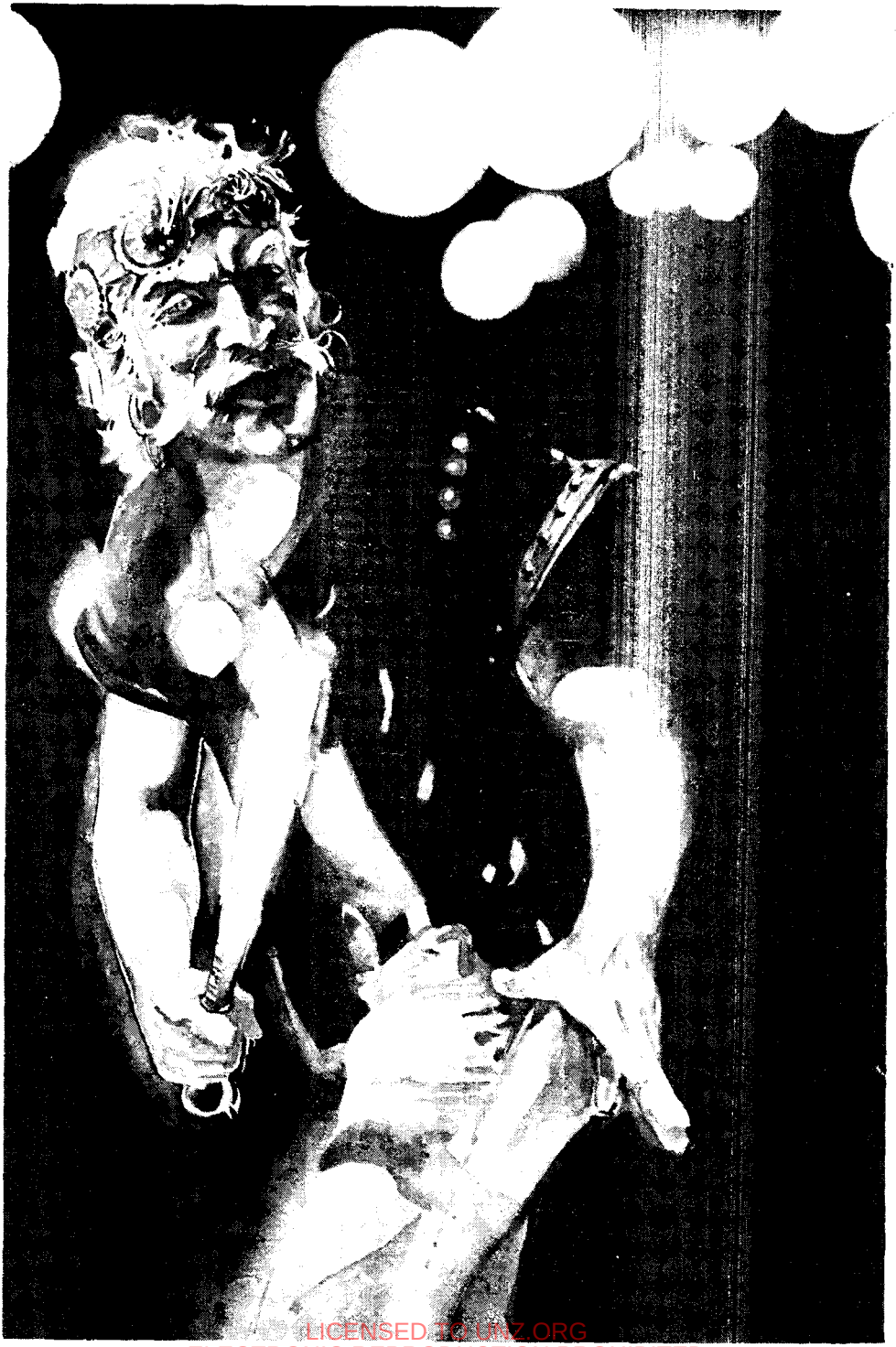

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It was the youngest of the four, a slim eager man called Merlo, who dangled at the end of the rope and pressed his ear against a carved shutter.

Without Randall's mindsense, their own were all they had to rely on. Two quick jerks on the rope, and they hauled him back up. "I could hear them talking," he whispered, and they moved along to the next window.

Again he signaled to be hauled back up.

The third time he hung, ear pressed against the shutter, for a small eternity, before he wedged the metal bar into a small carving and began to lever it open. The other three kneeled on the edge, not daring to shout down encouragement, jerking every time the wood gave with a loud crack.

Until the whole shutter came off, and Merlo wriggled in and disappeared.

"Me next," and Jan was scrambling down the rope.

As soon as his weight went off the rope, Randall followed, almost not feeling the patted "Good luck" the fourth man, Crane, supplied as he went over the edge. Because there was nothing close enough to the roof edge to tie the rope on to, they'd had to leave one man behind to hold the rope.

Randall wriggled in through the gap and blinked in the almost sliceable darkness.

"Here," Jan hissed, hand touching his arm. A light flared as Jan flicked his pocket tinderbox and held it high. Three ghost faces blurred and wavered, as three sets of dark-adjusted eyes tried to shut out the sudden light.

"We all know where we are," Jan spoke softly. "This is the room labeled K-14 in the plans. Storage, I think." It was obvious, since around them were neat ranks of stacked crates.

"Guards?" Merlo asked softly, eyes on Randall, as he nodded toward the plain, light-painted door barely visible in the flickering light.

"I can't sense." Randall's voice was tight. "We're high enough that there's no regular patrol here except once a watch, and I'm pretty sure it's passed by now. We're safe from them for several stanhours. But the irregular patrols—"

"We're two levels up and about a third of the way around from the control center." Jan spoke aloud what they all knew from studying and memorizing the plans. "There's an emergency stairwell not a dozen meters from here, though. Anybody have a reason for not heading straight for it, going down those two levels, and making our try for the control center right now?"

Merlo shook his head.

Randall shrugged.

The corridor to the stairs was empty, and the stairs themselves.

It was after they opened the door to the control level that their luck ran out.

There were perhaps ten meters of hall between their exit point and the door to the control center. In that ten meters were over two dozen men.

Surprise gave them a momentary advantage. All three men had their dart pistols out, and three of the enemy went down in the first seconds, convulsing helplessly as the tiny metal darts rammed nerve poisons into their systems.

Randall was a little slower rewinding his spring than the other two. Nonethe-

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less, three more men shouted and went down.

The thing that saved them, temporarily, was that only the closest dared to fire back; the men farther down the corridor couldn't, for fear of hitting their own allies.

But a handful of the closest, hampered by writhing bodies slamming about, drew their own weapons and returned fire.

Jan had been in the lead, and he screamed as he went down, his body jerking epileptically. Randall didn't have time to turn and see if Merlo, behind him, had gone down or not. The first of the running guards was on top of him.

There was a high, hideous scream, and then only his own struggle against a furious man who seemed intent on pounding Randall's head through the floor.

He struck back wildly, but the man on the bottom has all the disadvantages. His fists landed, at least twice, but the other was giving better than he was getting. Randall felt a sickening crack, as his jawbone gave under a smashing fist.

Damn you!

There were shouts and sounds of a scuffle, so Merlo must still have been fighting the futile fight. The odds were too great, they had gotten six, maybe one or two more, but there were still at least a dozen left—

And however many had been summoned by the alarms—

At least, with all the guards ganged up tight, we don't have to worry about the electros they must be carrying!

The fist smashed into his broken jaw again, and in a red-hot hell of pain and fury he swore death and destruction to his assaulter. And felt another blow but nothing after, as his head slammed again against the hard floor.

"You missed most of the fun." Jan was sitting by his bed when Randall opened bleary eyes to his personal brave new world.

"BlaaaaAAAAhh," he managed to get out.

"Don't try to talk." Jan was obscenely cheerful. "Doc Farfel clucked over that jaw of yours and then did the best he could. But you're going to have to be *very* careful over the next few weeks."

I hate your bloody guts!

"Crane's the hero, of course. Though—"

The large soft-spoken man standing behind Jan stirred uncomfortably and said, "Not me. It was a walkover."

"He figured a way to anchor that fool rope." Jan ignored the interruption, continuing his tale with gusto, "and then he came down to help."

Randall looked behind the two men hovering by his bed. He was in a strange room with—he could have groaned aloud. Carved bars covering a single window.

"Must have been quite a shock," Jan was grinning to show an impossible number of teeth, " to find that corridor littered with what looked like corpses all over. With—" A sideways look at Randall. "Not a mark on most of them. No slivers anywhere, no trace of physical nerve poisons. But ol' Crane knew what was important. He just walked into the control center, calm as if he were strolling in Fecundity Park on a restday, and shut down all the technodefenses.

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Then he went to the nearest window, dropped a flare, and then tossed those gasbombs you suggested we make and bring down all the stairwells. And the rest, as they say—'' the grin broadened—''is history!''

Randall felt his eyes widening incredulously. *You mean we* won!

''A couple of hundred guards aren't worth much,'' Jan was still grinning, ''when they're coughing and choking and crying and struggling to breathe. Our men all had masks, and ol' Crane even found the three of us and put our masks on, so we're not suffering the aftereffects of that.'' He sobered. ''Masks on us two, anyway. Merlo didn't make it. Somebody cut his throat.''

Randall shut his eyes. *So it's all over.*

Jan nodded, answering the unspoken comment. ''Our men have been identifying and passing out the frozen sperm since right after we marched in and took over. By now hundreds if not thousands of men are chasing down wives and sweethearts, hoping to be fathers. Too many to stop now, even if the government could grab the citadel back this very second. And that's it. The All-generator and his crew won't be able to force compliance with the threat of never allowing a man to be a father, or a woman a mother. They'll have to turn the children back over to us, they'll have to—'' a shake of his head—''make a lot of changes. A lot.'' He beamed.

And because you were expecting the changes, you and yours may wind up on top.

''Cynic.'' Jan read the mental comment with ease. ''There won't be all that much change, you know. There has to be organization, somebody to direct the irrigation ditches, somebody to say the city wall needs strengthening here—'' He laid a finger beside his nose. ''But from now on, men and women'll be free, to make a lot of their own choices, and we'll keep our children, and bring them up ourselves—''

Randall's mindsense was back: he could feel them, the hundreds of triumphant men, carrying the precious vials, the frozen sperm, their own, milked from them once a month when they were boys in dormitories, unknowing the reason, accepting it as one more adult senselessness. While they were fertile. Once a month, until, at eighteen, nineteen, twenty, the tests showed their fertility waning. By twenty to twenty-one, most men were sterile, and had only the frozen sperm to father with. The frozen sperm the government had kept, ejecting the new citizens into the harsh outside world, securing their only chance of fatherhood in the citadel, awarding procreation as a hard-won prize to the faithful.

But the citadel was breached now, and any man who wanted to could father, using his own sperm. A lot of artificial insemination would be going on for a while. And since women couldn't be held in the maternity ward from conception on—or sent there by those afraid of losing their own hope of parenthood, if one of the rare accidents happened—the children would be free, too. All the people would be free.

Until—Randall couldn't help it, he was a wombshipper after all, and the wombshippers had seen it all before — another government managed to put the clamps on somehow.

* * *

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When he was healed, Randall walked away, into the wilderness. Kasha and Jan and the others had what they wanted, but he didn't. And—for all he knew that Kasha would stay with him the rest of their lives, willingly, joyously—it wasn't enough.

He didn't come back for over two local years, and when he did, he was slim and lithe and brown and very, very deadly.

Jan, he had been surprised to learn after the citadel was taken, was a medic, and it didn't take Randall long to run him down. Nor did he have any trouble, when his accent identified him as a wombshipper. The people knew that a wombshipper had been one of The Four who had liberated the citadel. On this world, until memories faded, wombshippers would have no problems. In fact, Randall had the impression that most of those he met would have lain down and let him walk over their prone bodies, at a word from him.

Jan about had a heart attack; then he was pounding Randall's back, and grinning to split, saying all the silly things people say when they're suddenly, unexpectedly, deliriously happy.

Randall let him run down, and then asked, "Kasha?"

"She's fine." But there was a something. Underneath.

"The child?"

"A girl. Pretty thing. I tell her I'm going to wait for her to grow up and then—" A grimace. "You're not thinking to take her away from Kasha, are you?"

"Take a child away from its nurturing parent?" Randall was shocked. "I just wanted to be sure they were both all right, that's all. That they don't need—for anything."

"No," Jan shook his head. "No, everything's fine." He swallowed, then, "You—you don't want Kasha back, do you? Is *that*—"

Randall laughed. "What's the matter, did you marry her yourself?"

"No. And if you want her, she'd be—"

"Because I'm a hero? No thanks. If she's settled and happy, that's all I care about, I've no intent to disturb her. Truth, Jan? She settled and happy?"

A nod. "She married Crane. His boy's a month old now." A direct look. "I've visited with them often enough. He's a good man, Crane: a good father, he loves both children. Though he'd step aside and give you yours—or Kasha—or both—or all three—without a second's hesitation. We owe you too much—"

Randall shook his head. "Kasha was right, you know. I wanted to help, even though my law said No. So I did. If there's any blame, I share it. For now, how about a celebration, old friend. Wine women and joy, eh? Not Kasha; someone who has no ties—and wants none, you understand?"

"More than you think."

It should have been the end, yet it was definitely a beginning.

The real end—or beginning—came over ten local years later, when the next wombship landed. Jan had finally married, though Randall never had, being content with the role of favorite uncle to the children of his friends and with companionship without ties. He had a job, though he didn't need one; the peo-

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ple in their gratitude would have kept him in idle luxury all his life long. But he had never been the idle type, and after seasons of physical work, laboring in the fields, digging the necessary irrigation ditches, building, he had been offered a post in the small university/library, and his brains had been picked in real earnest. It didn't matter that he didn't know how things worked; the fact that this or that could be done was enough to get eager men who thought with their hands going. In truth, whether he liked or approved or not, Randall had become an institution.

The captain of the wombship was too busy to bother with a renegade wombshipper, but the third officer—all sweet little grandmother on the outside and pure titanium within—heard him out, from the running child (who had not been, he found out later, a child at all, but a very small adult) in full detail, without a comment and with faded blue eyes very impersonal.

"So," she said when his words ended, "and now what?"

Randall shrugged. The years planetside had changed him little. He was older, and leaner, and tougher. But he still looked at the wombship like Moses gazing at the promised land from Mount Nebo. "I can't stop the teaching," he said. "Whether it hurts or not, whether you blame me or not, whether it's meddling or not. As long as I'm stuck here, I have to do what I can for them."

Her mouth twitched. "Is that a backhanded maneuver to get yourself taken aboard again?" she asked dulcetly, stirring another spoonful of sweet into her tay. "It sounded almost like a threat to me."

He jumped slightly. "I apologize if it did, honored ma'am," he said. "I had not meant it so. I know the law, I know you cannot take me back aboard. I was but speaking my mind, honestly." He worried his lip. "Though if you order me to silence, I could return to the wilds, I guess—"

"Would you, if I ordered it?"

He took a breath between tight teeth. "I—I don't know," he answered with the honesty of one who doesn't really care, because honesty is easy if one has no reason to lie. "I survived once, when I was younger and angrier. But now—"

"A slow form of suicide."

"Yes."

"You survived the first time because deep down, you didn't really care whether you survived or no." She took a slow sip, and gestured to his cup.

"I suppose." It wasn't quite the same plant as tay on his ship, and tasted oddly spicy on his tongue.

"But you've healed now. You care again. And, more than likely, you'd die."

"Not certainly," he said mildly, and took another sip. It wasn't half bad, not really.

"But your death would be a waste," she was smiling softly to herself, "and we wombshippers can't afford waste."

"No," it was a truth almost bred into his bones, "you wombshippers can't afford waste."

"I said—we."

He looked full at her, no hope in his eyes, or on the lean, trimmed-down face. "I thank you, for not denying me my heritage as well," he spoke formally.

She smiled, face hidden in her cup.

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"You said you were a skilled programmer/analyst. We have no need of any more of such, but I'm getting old, and good officer material is hard to find."

His cup spilled from suddenly nerveless fingers, and he stared at her, mouth gaping open.

"A good officer," she lectured like a teacher of nurserylings, "must always know when to break the rules. When the penalty to oneself, no matter how great, is nothing compared to the consequences of *not* breaking the rules."

"Ma'*AM!*"

She produced a wipe from somewhere, calmly blotted up the spilled tay. "You'll be my aide for now, with the propects of sitting at my console in time." She tossed the wipe into a recycling chute. "If you want to come, of course. You've been here long enough; in truth, you've set down roots, made friends."

"Wheel above—" Words died on his tongue.

"Think about it." Her voice was gentle. "We'll be here several more watch cycles, after all. When you've made your decision, come and tell me — either way. We'll do whatever we can for you—*either* way." Even more softly, so that he had to strain to hear, "Now you know what the real penalties are. Some things cannot be assaulted with impunity. Some lessons—" Her voice trailed off. He was listening, but not hearing, his mind absorbed with its own thoughts. She waited until he stirred, and made polite conversation until he finally left.

After he'd gone, she stared at the door that had closed behind him, and wondered which way his decision would go. It would be his choice, and his alone, she'd see to that. Even if she rather hoped he'd return to the wombship.

Though ten years of planetary living made it a hard choice.

A hard choice. She was almost pleased about that.

Hard choices made hard men.

Wombship captains needed to be hard men.

Wombshippers always had seen things in the long term. ■

● If science-fiction is any anticipation of the general direction of science, if the scientist here discloses (perhaps under a pseudonym) his secret intentions and dreams, it is obvious that technological man will not be content with exploring the universe at the insufferable crawl of the speed of light. His machines must eventually respond to the infinitely faster speed of thought.

Alan W. Watts,
This Is It

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Jay Kay Klein's biolog

Jayge Carr

"Ms." found in a manuscript may fairly characterize the woman who first appeared in print as an *Analog* discovery in October 1976. Jayge Carr qualifies as part of the earliest wave of modern feminists determined to reach full intellectual attainment, even if it meant invading previously all-male domains. In the '50s she was kept out of the rocket club at her high school because she was a girl. Undiscouraged, she went on to secure a B.S. degree in physics, starting at Carnegie Institute of Technology and finishing at Wayne State University; worked for NASA in the field of nuclear physics; and got well into doctoral studies at Case Western Reserve University before being stopped by the reality of femininity (as contrasted to that of man-made, arbitrary rules): she had first one and then a second child.

Of course, a good woman won't keep herself down. Jayge started a second career as a writer, drawing upon the dual resources of a scientific education and the inner feelings of a woman. It's led to a variety of science fiction which didn't often appear in the past—after all, it used to be that nearly all scientifically educated persons were male.

Jayge started reading science fiction contemporaneously with receiving her first Erector and chemistry sets. She grew up with nuts and bolts and valences—and Poul Anderson and Chad Oliver. Caught reading Vonnegut's *Player Piano* during a social studies class, she explained the book as a study of the effect of industrialization on society. Although she became a physical scientist, Jayge feels that science fiction encompasses all of human endeavor: economics, history, and sociology included. Literature in her view is a mirror held up to show human beings as we are, or could be, or should be. And there are paths to take and paths to avoid.

Strangely enough, it's bad writing that has brought many good writers into science fiction. In a reprise of a story told by many writers, but with a gender twist, Jayge says that one day she threw a terrible novel across the room and exclaimed, "I could write a better book than that!" Her husband suggested, "Why don't you?"

Housework has been suffering ever since, and her writing area especially looks like the middle of a snowstorm. Having endured a series of rejection slips totaling close to a hundred while polishing her craftsmanship, she almost tossed a first acceptance check from *Analog* into the wastebasket, thinking the envelope was some subscription-touting junk mail. Now, two books *(Leviathan's Deep* and *Navigator's Sindrome)* will be joined by a third next year, *The Treasure in the Heart of the Maze*. When not typing, she composes her thoughts while sewing, embroidering, crocheting, and crewelling.

Jayge shares a work habit with Isaac Asimov, the best term for which is the well-known chess expression of "sitzfleisch": firmly planting the seat of the pants on a chair and keeping at it until the job is finished. Since she feels the most important elements of a story lie within its characters, human or alien, it's these that she devises first. Like other writers to whom science is important, she does a lot of careful research and intricate calculating. However, she thinks that what really must be worked out are the anthropology and sociology of the environment in which the characters live. And sometimes the characters take over the story. It's then that Ms. Carr is really the creation of her own fiction.

In the absence of a portrait, Jayge's own words will help provide a description: black hair, fair skin that tans well, a little overweight, and nearsighted with a pair of very thick glasses on a pug nose. "I look like Judy Garland when she was not watching her weight." ■

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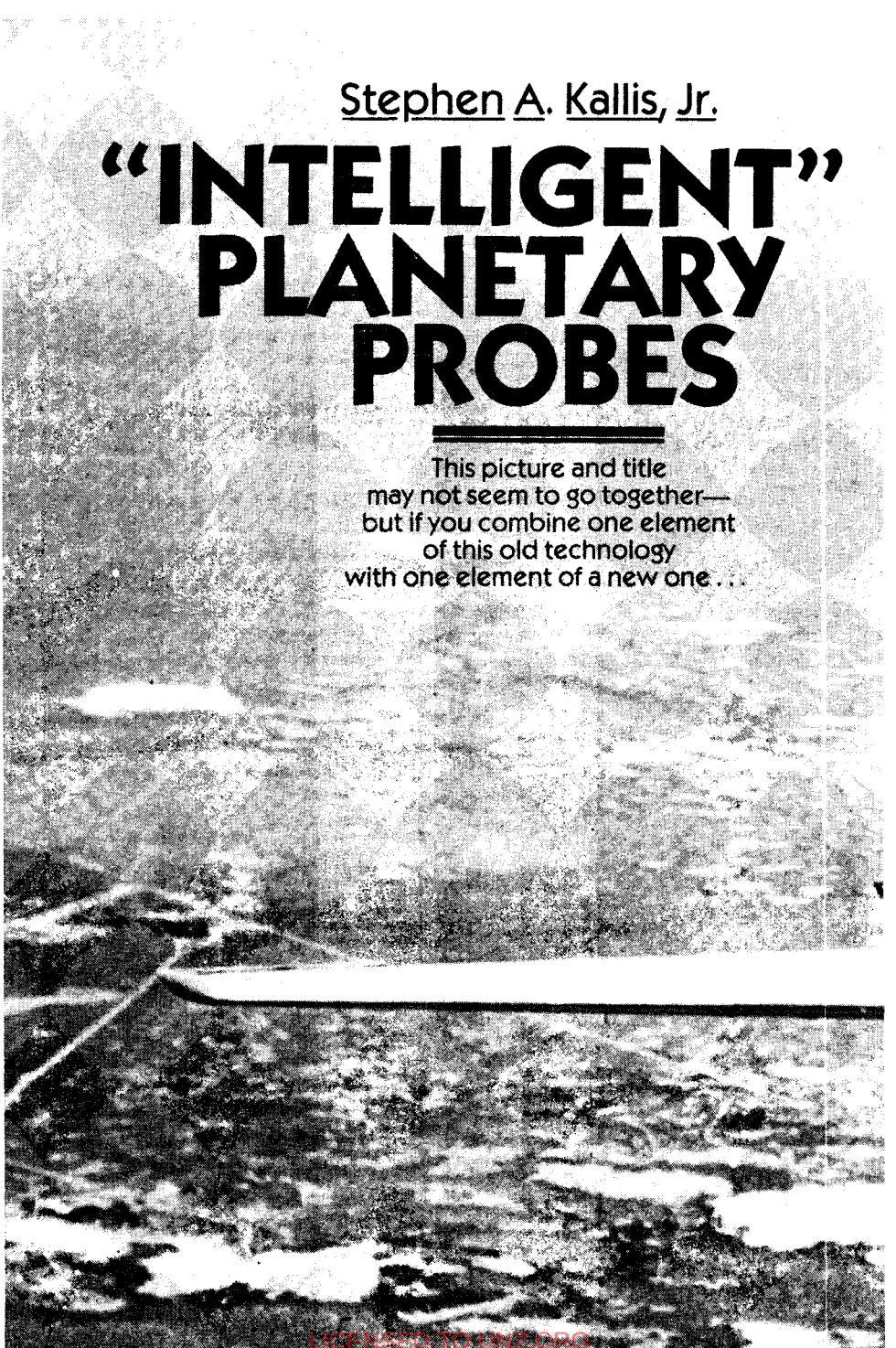
Stephen A. Kallis, Jr.

"INTELLIGENT" PLANETARY PROBES

This picture and title
may not seem to go together—
but if you combine one element
of this old technology
with one element of a new one . . .



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Long before manned exploration of planets, electronic surrogates will conduct surveys of the worlds. Beyond the advantage of safety to humans offered by this approach—it's always easier to survive an environment you understand than one you don't—the reduced power and support requirements of most probes means that they can be delivered with much greater ease than any manned expedition.

This has already happened with flybys, orbiters, and landers. From the information already obtained from such probes, the entire picture of the solar system has been altered. An interesting exercise is to find a good book on astronomy written in the 1940s or 1950s and scan it in light of today's knowledge, to see how far planetary knowledge has come in a relatively short time.

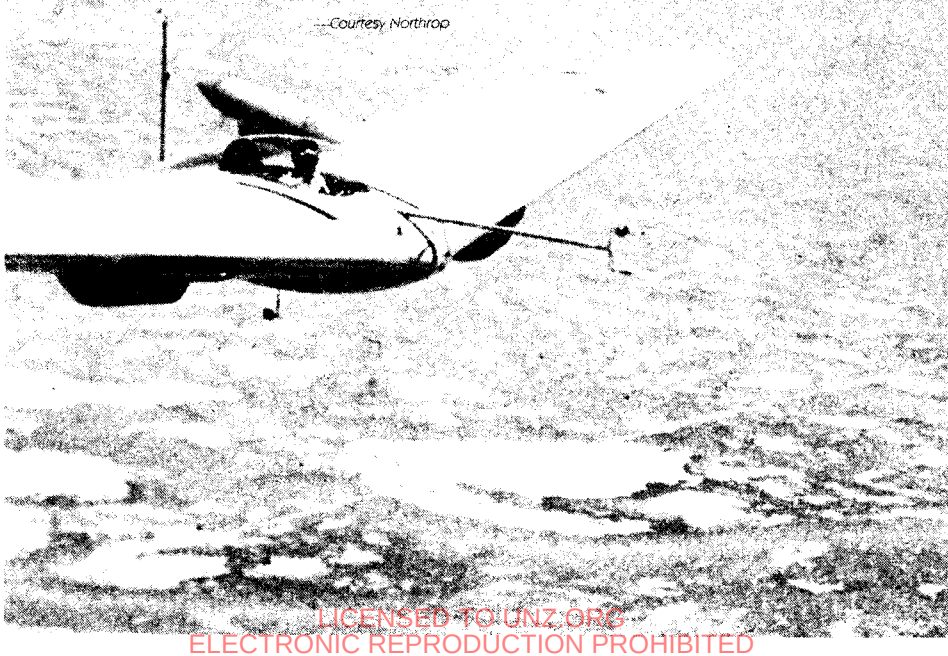
However, future exploration by proxy could go a lot farther than it has. The problem with current methods of data-gathering is that they are inflexible: a flyby has one pass to gather its information; an orbiter keeps a fixed relationship to the planetary surface beneath it; and a lander just sits.

The ideal exploratory probe would be mobile, permitting researchers to obtain data over regions of their own selection. However, until fairly recently such an idea would not have been very practical.

On Earth, exploring relatively inaccessible areas of the planet by proxy can be fairly easy. The instrumentation is installed on a form of probe that can be controlled remotely. An operator well away from a hostile environment can maneuver a probe through signals conducted along wires or transmitted via

Photo 1—Northrop N9M Flying Wing experimental aircraft, early 1940s. The powered, piloted version has protrusions (cockpit, engine housings, etc.), but does not have a rudder, using differential aerodynamic braking to produce the effect.

Courtesy Northrop



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radio. In fact, relatively inexpensive radio-controlled toys are available at many hobby shops and consumer electronic stores; the basic mechanism of such toys isn't too far removed from that used in some types of remote-controlled probes used on this world.

On another planet such a scheme could not be used by Earth-based researchers. Something gets in the way: the speed of light. At its closest, Venus (our closest planetary neighbor, unless we count the Moon as a planet) is still far enough away so that a signal from Earth would take about two and one-third minutes to reach it. This means that someone perceiving a problem (say, on a television screen) and reacting immediately would cause the probe to take action over four and one-half minutes later—which would probably be far too late.

Until fairly recently, the only way one could consider having a "mobile" probe would be by controlling it from an orbiting spaceship, preferably in a synchronous orbit. This would not be very practical, since it would involve transporting both probe and humans to the target planet.

Now, however, there is another solution: we can computerize the probe. The development of computers has been very rapid, perhaps more so than that of any other technological device in history. Whether the space effort spurred the growth of the computer can be debated; however, whether or not, computers can be applied very successfully to space activities. In fact, there are many powerful units small enough to be built into probes.

In computer parlance, addition of a processor and program to a device makes that device "smart" or "intelligent," depending upon the power and functionality of the computer that has been added. That the "intelligence" added is actually the program written for the device by a human is unimportant; addition of a built-in computer means that the device can react to changing conditions—sometimes fairly complex ones—without further human intervention. Just the sort of thing one needs when trying to design a mobile probe that cannot be guided directly by researchers.

Mobile probes can be categorized as "land," "sea," or "air" vehicles. In many respects, "sea" vehicles can be ruled out immediately because the only planet known to have large areas of open liquid is the Earth, and that is already being explored. "Land" vehicles would resemble remote-controlled automobiles or perhaps snowmobiles, and would be particularly useful on those worlds with little or no atmosphere. Each would have to contain an energy source that would permit it to drive over terrain for some distance.

The land vehicle, often called the "Rover," has a whole range of problems due to its contact with the ground. Even moving at moderate speeds, the guidance capabilities of the vehicle would have to take into account many obstacles, whether protrusions such as rocks or depressions such as pits or small craters.

Some of the problems involved in developing a computer arrangement sufficiently "aware" of its surroundings

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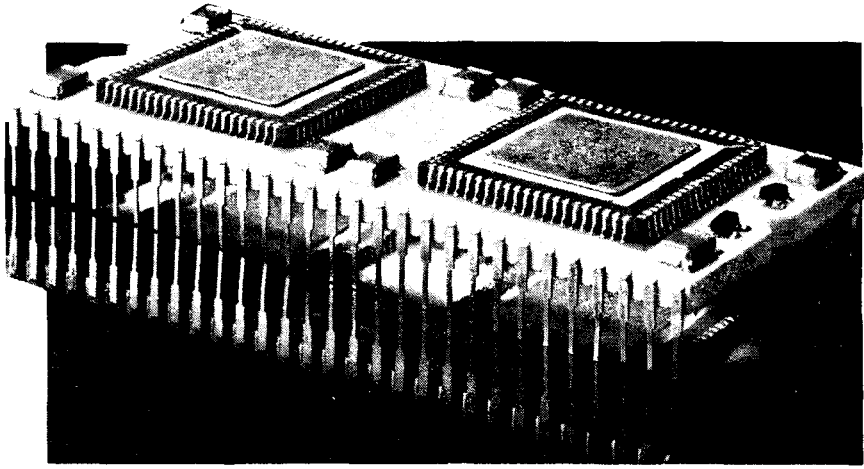
to cope with navigational difficulties of this sort have been the subject of research for more than a decade. Fundamental problems include finding a way to enable the rover to obtain a three-dimensional model of its surroundings. (See, for example, "MR Robot," by Louis L. Sutro and William L. Kilmer, *Analog*, May 1970, pp. 38–71. The technology's improved from the time of writing, but the basics of the discussion are still valid.) Without such provisions, the rover would be unable to function effectively.

For planets with thick atmospheres, vehicle reached the surface, it would probably be out of radio transmission range. In fact, there's theoretical evidence that the gas giants have no well-defined region that can be called a surface.

For gas giants—and for Venus, for that matter—there's a better solution through use of "air" vehicles, or aircraft. These can be balloons (technically, "aerostats"), which derive flight by buoyant forces, or heavier-than-air vehicles (technically, "aerodynes"), which derive flight by a reaction against the atmosphere they are moving through (i.e., "lift").



—Courtesy Digital Equipment Corp.

Photo 2—Modern microcomputer "chip." This MICRO/J-11 unit can fit in the palm of a hand, yet has all the power of a top-line minicomputer. It could easily be used as a central unit for space-probe "intelligence."

land vehicles might not be a smart choice. Venus is extremely hot, and even the best vehicle would have a very short lifespan on the surface. On the gas giants like Jupiter or Saturn, the atmosphere is so thick that, before the land

Some discussion has concerned balloons as instrument carriers, though for a long-term mission they would have problems. With the exception of Venus, the atmospheres of various worlds have a great hydrogen component, meaning

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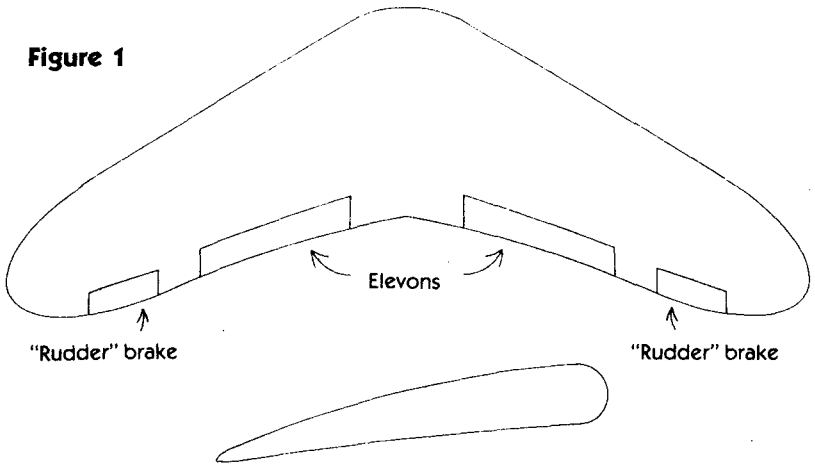

Figure 1—The "flying wing" concept has a lot of pluses for a glider probe, particularly in situations where designers anticipate high loadings on the structure. Unlike conventional aircraft, a flying wing is structured so that its entire surface can be used for aerodynamic lift. With instruments rather than human pilots, the entire surface of the "wing" can be made smooth, without protrusions. Aerodynamic control is achieved through two sets of surfaces: the "elevons," located inboard, which move together to provide pitch and opposite to each other to provide roll. Air brakes on the outer trailing edge of the wing act as a rudder; when needed, the braking action of one side causes the wing to yaw in that direction.

that lift could not be achieved practically by filling the balloon with a less dense gas. This means that, for most worlds, the balloon would have to be filled with heated hydrogen.

A hot-hydrogen balloon requires a heat source. In addition, balloonists will explain to those interested that after a time the structure of a balloon can be affected by continued application of heat; and since hot gas rises within a balloon as well as outside it, the top of the balloon soon develops a hot spot. The hot spot would shortly result in weakened balloon fabric, meaning that the lifespan of a hot-hydrogen balloon would probably be fairly brief even if a compact heat source could be developed.

To most people, however, the balloon seems a better bet than the heavier-than-air craft. This is because they picture aerodynes as conventional airplanes utilizing either jets or propellors, either of which implies a respectable powerplant; certainly one that uses more energy than a balloon.

There is another, and little-discussed, alternative: the glider (or "sailplane"). Although lacking an engine, a sailplane can travel respectable distances by taking advantage of air currents.

As any sailplane pilot will testify, a glider launched in perfectly still air from

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a towing aircraft will settle slowly toward the ground. This is because the lift the sailplane gets from its wings is generated by the forward motion of the aircraft. The only way the sailplane can get forward motion is to go into a shallow dive, so that the speed lost from air friction is made up by acceleration due to gravity (pilots call this "trading altitude for airspeed"). However, the "sink rate" of a sailplane can be very slow (for instance, the Schleicher AS-W17 sport sailplane has a sink rate of 1.6 feet per second with a forward velocity of about 46 miles per hour).

Suppose, however, a sailplane in still air having a sink rate of 3 feet per second encounters a thick column of air rising at a rate of, say, 7 feet per second. Then, *as long as the sailplane remains in that column of rising air*, the air will carry the glider up with it. In this example, the sailplane will still "sink" through the air at 3 feet per second, but with the air rising at 7 feet per second, the result will be a net gain of altitude of 4 feet for each second it remains within the air column. A smart sailplane pilot can locate rising masses of air and, by keeping within them (by circling, if necessary), can obtain sufficient lift to raise the sailplane to a respectable altitude.

Using this technique, a sailplane pilot could in theory keep a glider aloft indefinitely, even while traveling a great distance. The way this is done is to gain sufficient altitude so that the sailplane can traverse the distance between one rising column of air and another by standard gliding at a normal sink rate, and so on, indefinitely. Sailplane pilots have been able to travel distances of hundreds of miles by these techniques.

Interestingly, the only "internal" energy consumed in the process is the relatively minuscule amount required to adjust the control surfaces (ailerons, elevator, and rudder) of the sailplane. The rest of the not inconsiderable energy required to keep the sailplane aloft is extracted from the environment.

With the advent of compact computers, the "smart pilot" of an unmanned sailplane can be a computer system that sends signals to low-powered machinery to manipulate the aircraft's control surfaces. This can be done with relatively little energy consumption; certainly a lot less than would be required to sustain a balloon.

But how does the computer fly the sailplane? In a mobile-probe arrangement, there would have to be two complementary missions for an on-board "intelligence." In the short term, it must be able to make adjustments that would keep the sailplane airborne. In the long term, it should be able to receive and act upon instructions broadcast to it from researchers.

Considering the short-term problem first, the on-board computer must be connected to instruments that will enable it to obtain data of the conditions affecting the airspeed, rising or sinking, and orientation of the sailplane in which it is mounted. This is not difficult to do because there currently exist instruments that provide equivalent information to pilots of sailplanes or powered aircraft. Either certain of these instruments could be adapted for this specialized "remote" flying, or those instruments that would be impractical

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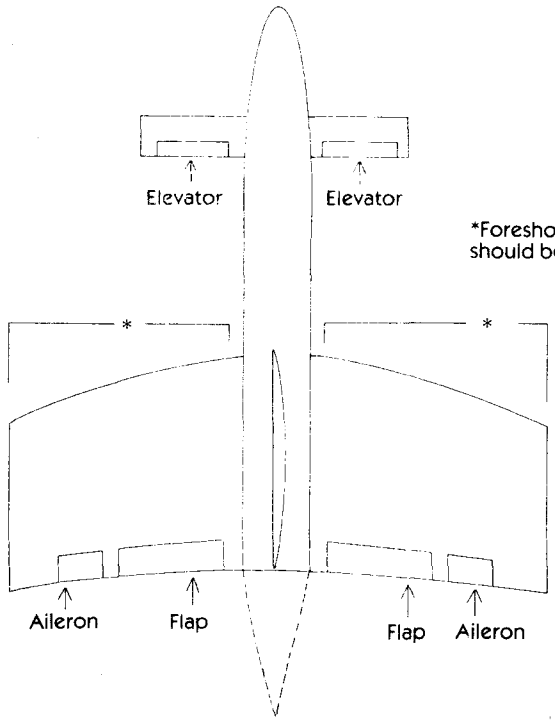

Figure 2

*Foreshortened to fit; span should be about twice this.

Figure 2—The "canard" configuration of an aircraft has been receiving increasing interest by aerodynamicists. Advantage of the canard is that it is difficult to stall such an aircraft (position it so that the wings effectively lose lift), and a number of canard designs have surfaced over the past three or four years. A relatively stall-free aircraft would be a tremendous plus in a distant probe. (Note: The canard picture here has very foreshortened wings, for purposes of fitting them on the paper.)

to adapt could be replaced by other devices that could perform equivalent functions.

Certain instruments that have been used for years could easily be adapted. The airspeed indicator of a modern air-

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craft uses a tube (pitot) extending into the airstream that uses ram pressure to deflect an indicator that looks like a speedometer needle. The indicator mechanism could be replaced by an electronic pressure sensor, which could then be attached to the computer through appropriate interfacing. Similarly, the altimeters used in aircraft are specialized forms of aneroid barometers, in which the pressure scale has been replaced by an altitude scale. Here again, the indicating needle mechanism could be replaced by a strain gauge connected to the computer.

Another instrument that can be adapted in this way is a "rate of climb" meter, which is a sort of altimeter with a leak built into its aneroid chamber. Effectively, any change in altitude will create a pressure difference between the gas contained in the chamber and that surrounding it, but the leak will tend to equalize the pressures. As a result, as long as the aircraft remains level there is no deflection of the meter's needle, but as the aircraft rises or descends a pressure difference is created that results in a deflected needle. By carefully calibrating the leak, it is possible to determine the actual rate of climb or sink with excellent accuracy. Again, for a probe, the needle could be replaced with a sensor interfaced to the computer.

Figure 3

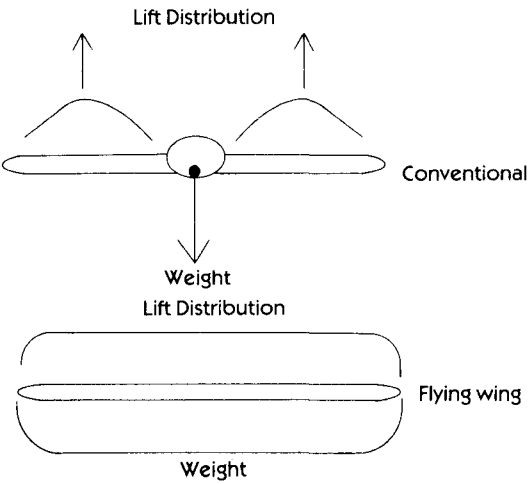

Figure 3—Comparing a conventional aircraft (including canard) to a flying wing indicates why the latter is particularly interesting for high-gravity environments. In a conventional aircraft the fuselage does not contribute to lift and tends to concentrate all of an aircraft's weight along its axis. This produces lift- and weight-center moments, adding to the stresses for which the aircraft must be designed. By contrast, the flying wing design utilizes the whole structure for lift, and the payload can be distributed evenly throughout the wing, meaning that there are no built-in moments to add to structural design problems.

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Two instruments common to powered aircraft that would not adapt too well to a probe are the "attitude indicator" (sometimes known as "artificial horizon") and the turn indicator. These instruments normally use mechanical gyroscopes which are heavy power-consumers for long missions. However, in the past few years a so-called "laser gyro" has been developed which can give reference information even more accurately than the finest mechanical gyroscope. The principle is simple: a laser can produce a beam of extremely narrow bandwidth, and if such a beam is directed into a closed loop via reflectors, any rotation of the reflectors would result in a Doppler shift of the beam that could be measured precisely to give the angular deflection. Three such laser gyros connected to the computer could supply the data required for pitch, roll, and yaw.

Ideally, a few more sensors could be added to help the probe to fly. Some form of remote heat sensor might be added to help the probe find and exploit rising columns of heated gas. An accelerometer might be added to warn a probe if it's approaching its load limits (say, in a high-speed turn).

Unlike the land rover, the gliding probe need not have high-resolution "vision." Reasons for this include the great distances involved in air travel. It's possible to sense something sufficiently far away such that immediate avoidance action usually is not required, but can be achieved in a leisurely fashion. In addition, the distances involved are such that the limits of stereoscopic vision, which is the normal way of perceiving three dimensions, are exceeded. A low-power on-board radar or its equivalent could provide the information required for collision avoidance.

The result of all this would be a probe "intelligent" enough to be sufficiently "aware" of its surrounding conditions that it could remain aloft indefinitely and at relatively low power costs. Its computer could handle all the "piloting" with sufficient resources available to maintain communication with the distant researchers.

If the computer has sufficient memory capacity, it would be possible to give the probe general instructions. Unlike true remote control, this would involve sending only the electronic equivalent of "Move to the north a bit and take some readings" or, in the case of Jupiter, say, "Go over to the edge of the Great Red Spot and nose around a little."

Either the "pilot computer" or another could be used to operate the scientific payload. It would gather the data from sensors and send them back, as is being done by today's space probes.

The actual design of such a probe would be aeronautically interesting. There are several "proven" sailplane designs that people might wish to adapt to a planetary probe, but whether they would be appropriate for a planet with a different type of atmosphere and a different gravitational acceleration is a question that might take a bit of research to answer. Perhaps on a high-gravity planet like Jupiter, a "flying wing" structure—where the load is distributed equally along the wing surface—would be better. The area's wide open for re-

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search.

The interesting thing about the "intelligent glider" probe is that in theory a prototype should be buildable now, using off-the-shelf components. By the time we are ready to send the next generation of probes to the planets, it should be quite practical to put together an intelligent glider.

It would doubtless be the most cost-effective way of gathering large amounts of data over a wide area of an otherwise unexplored planet. And unlike the satellite, which has to scan from afar, the glider probe would be in a position to concentrate an investigation in a region, should that be called for.

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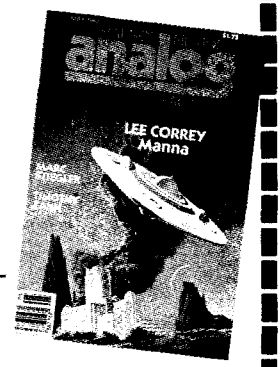

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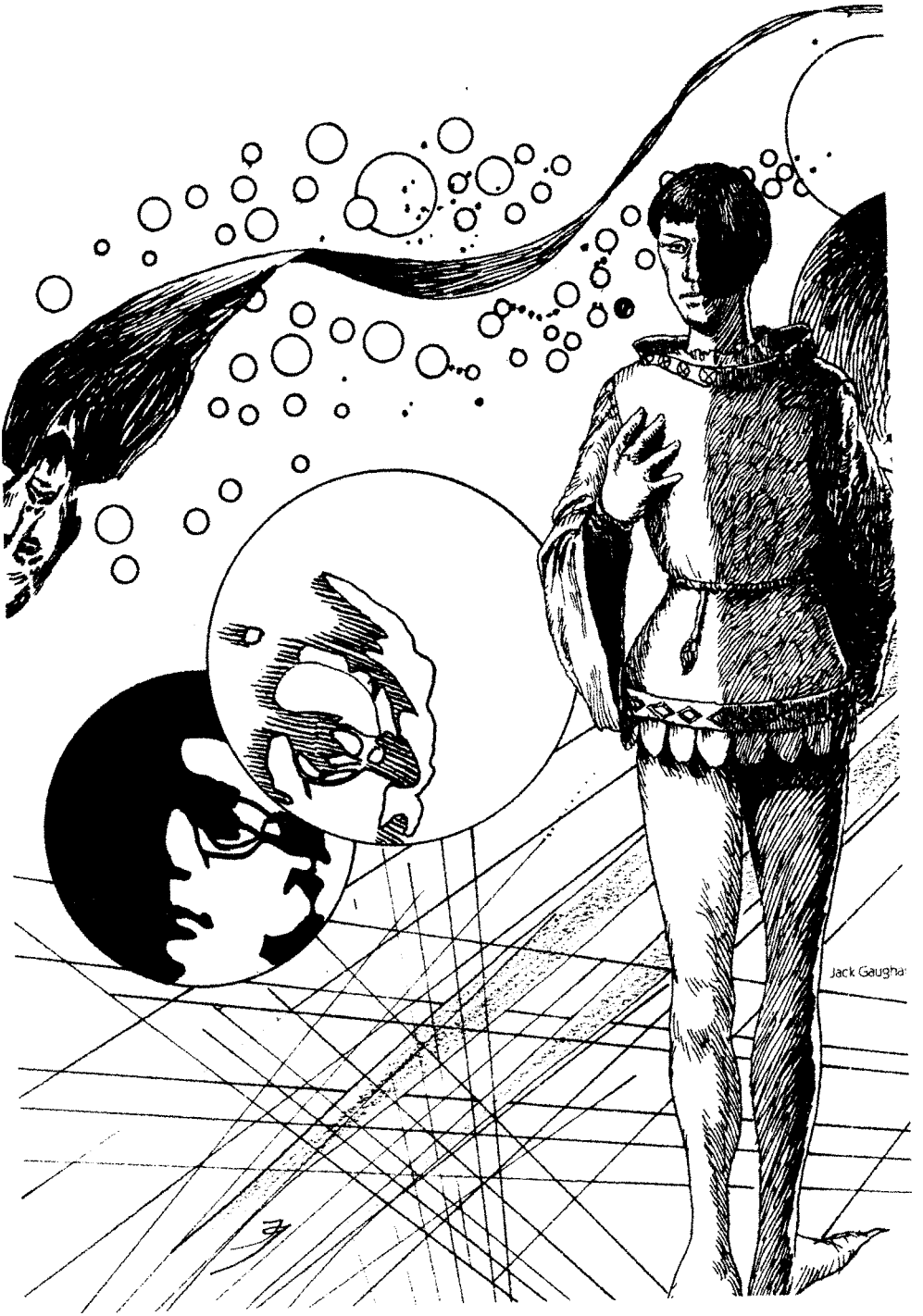

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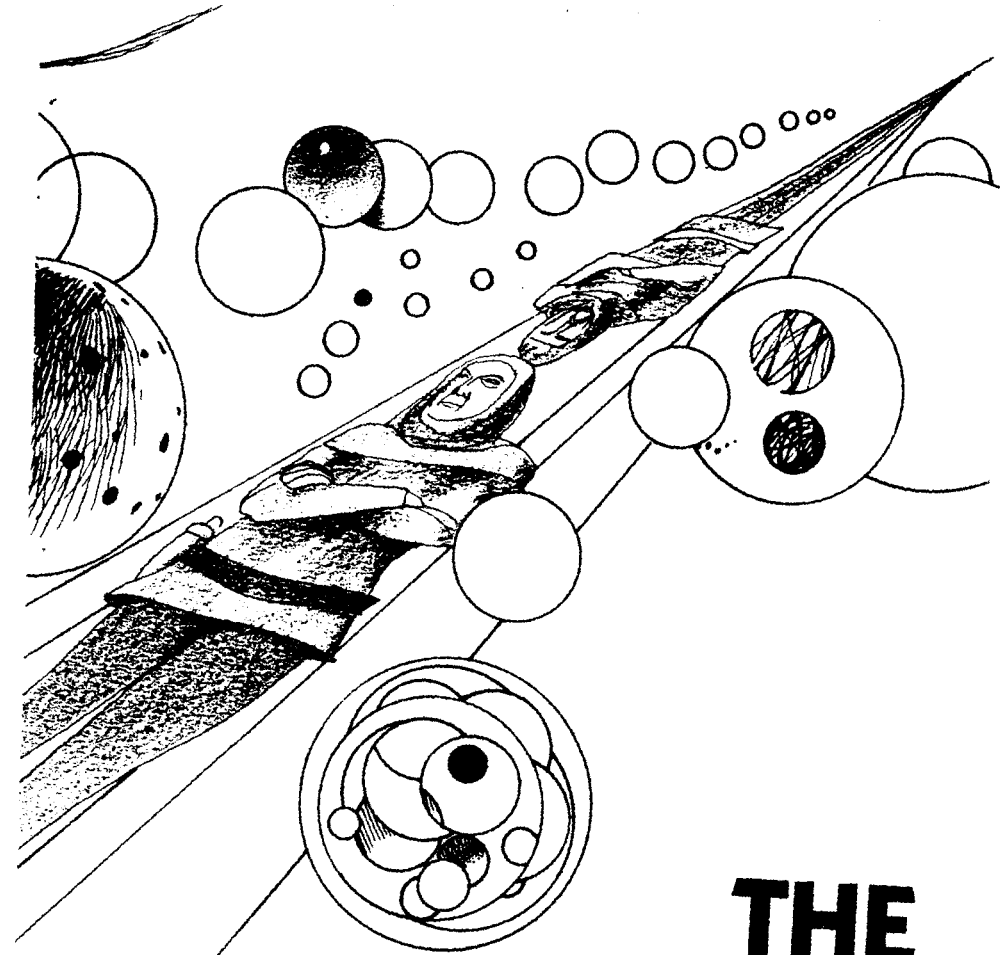

THE GEOMETRY OF NARRATIVE

Hilbert Schenck

This is, as you'll see, a bit hard to categorize. I *think* it's a short story, but "short" is a measure of length.... Anyway, watch your step, and enjoy!

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The graduate seminar, "Modern Critical Theories," (Eng. Lit. 674, 3 Cr.) theoretically occupied only Wednesday afternoon, but in fact it stretched into a region where time virtually ceased to run. There was no relief, for with only six of us in the small seminar room, drowsing or nodding into a sweet ten-minute repose now and then was impossible. We were all graduate "section hands," earning our tiny pittances as we pursued will-o-the-wisp doctoral degrees by teaching the vast, sluggish, introductory courses in English Lit and its stunted, bastard child, Rhetoric (whatever Rhetoric actually is).

Yet what we chosen few studied in our ivory tower of scholarship was even more boring and useless than the oversimplifications we droned at the sleeping or whispering frosh. Finally, after more than two hours of an especially confused lecture, I spoke my complaints to Professor Herman Gabriel Stang, an ancient full bull in English Lit and my major professor.

"Dr. Stang," I said as bravely as possible, "may I speak, for once, frankly to you at this seminar?"

Old Stang, his bald pate a ruddy shine under the fluorescents, turned little colorless eyes in my direction. A diamondback rattler, I thought suddenly, would contemplate a lost prairie dog with similar warmth. "Academic freedom, Mr. Pilson, is the foundation stone of this university. Of course you may speak with frankness," he said from wrinkled lips that hardly moved. His large and rimless trifocals reflected the room lights with a shimmer as his head continually shook and gave him the look of a man turning into a huge bee.

"Then, sir," I said, "I wonder if you would comment on the purpose behind all this stuff we're doing, all these so-called critical theories, like structuralism, deconstruction, semiotics. Hell, we can't even get the freshmen to wake up for Mellors plowing Lady Chatterly. If we ever tried to talk semiotics to them, half the class would dislocate their jaws from yawning and the rest would go into coma."

Stang gave us all a frozen grimace and thin Miss Lee, sitting at my left, gave a shiver and took a large gulp of hot coffee. "You see English Literature as mainly cheap, titillating entertainment then, Mr. Pilson?" he said in an arctic voice.

"Not a bit," I answered. "Look, there are plenty of good, useful reasons for reading and studying literature, but hocus-pocus like semiotics and the rest don't relate to any of them. The trouble with English Literature is that it's run out of dissertation topics. I mean, how many more studies of Henry James's letters to his publisher's cousin's landlady can there be?" That was a bold shot, since James was one of old Stang's "men." Miss Lee's almond eyes went slightly wider, and she casually shifted her chair so as to get a bit farther along the table and away from me.

Stang, surprisingly, gave me a considerable smile. "So, since we have buried James under whole forests of dissertation paper, you see us now simply creating new scholarly methods as—What is the new slang word?—a *scam* to keep old men like myself employed?"

I nodded, also smiling in what I hoped was a steady way. "I couldn't

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have stated it any better than you did, Professor," I said. "Anybody can think up more useful literary tools than semiotics in ten minutes. Take the idea of narrative geometry, for example . . ."

The room fell silent, and Dr. Stang's face took on a more crafty, yet somehow more human expression. "So, Mr. Pilson, you've been planning an ambuscade for me, a little scene to enliven our labors. Very well, I will be a sport and play the Stan Laurel part. What, Ollie, is narrative geometry?"

Several in the class chuckled in relief at Stang's suddenly jocular tone, and Miss Lee, who was doing her dissertation in film, gave a brief yet grateful laugh.

"It's always been around," I said, shrugging and speaking with the casual assurance of supposedly long acquaintance. "Any narrative has a beginning, middle, and end. Well, that description also defines a one-dimensional line."

Dr. Stang fired off a pitying sneer. "That sounds like the sort of profound triviality that might entrance the scientific community, but what exactly does it say to us about any given literary work?"

"Nothing," I said. "You've got to go to at least two dimensions, to flat graphs. Plenty of the old books dealt with Shakespearean plots in terms of a rising and falling line. One coordinate was the time sequence of the story and the other was something to do with whether the plot was under development or resolution. The method helps you pick out the moment of peak narrative intensity.

"Okay, now let's extend to three-dimensional geometrical systems. An example might be the Arabian Nights stuff. You know, the Thousand and One Nights? What is the geometrical analog to this work? Think of a three-dimensional volume, say a sphere, which represents Sheherezade and her framing story, in which she spins yarns to delay her execution. Inside that sphere and all contained by it are the thousand stories she tells. Think of them as smaller spheres within the frame story-sphere but having various sizes and relationships. Some story-spheres only touch each other and may form chains, stories in which one person and then another spins a yarn, each in turn but all within the same outer reality.

"Sometimes several story-spheres are completely enclosed, each within the next-larger outer one, as when a character in one story offers to tell a fiction, and then a character in that fiction starts on a new narrative with new characters. The point is, this assemblage of intersecting, enclosing and tangent spheres can be seen as a geometrical model of the total work. Probably undetected patterns and strengths in the story groups could be uncovered by a study of the total figure, but I think you'd need a computer-graphics capability. There are just too many stories to do it by hand on paper."

I stopped the lecture and Dr. Stang, who did not look especially impressed by all this, shrugged. "Well, perhaps, perhaps. But one swallow does not a summer make, Mr. Pilson. I assume you can offer other congruities between geometry and narrative structure?"

"Let's take a geometrical system and then try to imagine its literary counterpart," I said quickly, now waving a

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confident hand at him. "A four-dimensional hypercube or tesseract can be projected into our space in the form of a large cube with a smaller one inside and the two connected at their eight corners. The big cube is the solid boundary of the hypercube nearest to our space, the little one inside is the bounding cube farthest away, and the two are connected by six other distorted cubes that stretch away from us into the fourth dimension. You might call that fourth dimension time, and say that the little cube is the same cube as the big one, but now farther off in future time. It's really going to be the same size up there ahead, but we show it smaller to indicate that it's farther off."

I gave Miss Lee a sideways glance, saw a concealed but unmistakeable bewilderment, and plunged ahead anyway. "Okay, instead of *time* as the fourth dimension let's use something I'll call *narrative distance*. Take a classic example, the play-within-the-play in *Hamlet*. Here are two separate three-dimensional realities: the play, *Hamlet* itself, with old Claudius popping his mental cork when he sees the Hamlet-buggered script acted out, and the shorter, smaller, on-stage murder-of-Gonzago play. But the little play is at a greater narrative distance than *Hamlet,* both from the real audience and from the Court of Denmark watching it on stage, since it is presented as a created artifact within the 'true' or 'real' drama. So not only is this part of *Hamlet* modeled by a four-dimensional geometrical object, but the staging assumes the exact projected form of the hypercube, with one small stage located in the middle of the other, larger one. Pirandello did the same sort of thing, as have others."

Professor Stang had been following me closely and his crafty expression now intensified. "Interesting, Mr. Pilson, but it so happens that I know a little about metageometry and related matters. If this literary model is worth anything, shouldn't we be able to perform, in a literary sense, the same manipulations that are possible in four-dimensional, geometrical space? For example, a normal cubical space, when rotated a half-turn in the fourth dimension, produces a mirror-image reversal of three-dimensional objects contained within it."

I knew old Stang cared little for geometries and less for geometers, and had picked up that tidbit at the joint faculty-student science-fiction seminar last term, when we discussed an H.G. Wells story about a chemist whose body was reversed right for left by being flipped over in the fourth dimension. But I nodded with enthusiasm. "Tom Stoppard really did that when he wrote the play, *Rosencrantz and Guildenstern Are Dead,*" I said at once. "That play is *Hamlet* in mirror-image narrative. The original main characters—Ophelia, Hamlet, his mom and dad—are only seen now and then, while the minor characters in Shakespeare's play are turned into the leads in Stoppard's. Furthermore, when they did the play in New York, they set the staging as though you were looking at the actual *Hamlet* from the *back,* from behind the servants' quarters of Elsinore Castle. *Rosencrantz and Guildenstern Are Dead* can be geometrically modeled as *Hamlet* after a mirror-image reversal due to a half-rotation in the fourth dimension."

It all sounded slick, but of course I

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was ready, whereas old Stang was taking in the whole thing from scratch, piece by piece, and each piece was a new thing. But he was paying close attention. "Mr. Pilson, this trial balloon you're sending up is bright and gaudy enough, but I doubt it has much lift. The number of serious literary works that match these patterns is few indeed."

"On the contrary," I said firmly, "the concept of one reality lying inside another applies to *every* literary work. Everything written has at least two, interconnected three-dimensional spaces; the space of the author and the space of his word-constructed work."

I looked around fiercely. "Look! We here, this little discussion between Dr. Stang and myself, our whole university, can only be recorded as words on paper, right? Somebody in another and entirely different three-dimensional space wrote these words, yet both these spaces are totally interconnected, in the same sense that the front and back spaces of a hypercube are totally connected through the fourth dimension. And they are connected across that new direction I'm calling narrative distance."

I turned a page in my ring binder. "Reversing the location of the two, separate realities along this fourth, or narrative, axis is quite easy," I said, and I began to read aloud to them from a typed page . . .

My daughter looked up from the typescript and shook her head until her long, blonde hair swung like a pendulum. "Hey, Dad, this is heavy stuff! Are you writing popular fiction or a paper for the *Journal of Epistemological Thought*?"

I shrugged and took a pull on my drink. "It probably won't sell to *Penthouse*," I said, "but the point is, can you follow it?"

My daughter responded with a thoughtful sip of her gin and tonic and slowly nodded. "Yeh, sort of, I guess. You're saying that since you and I, this conversation, is presented as the author talking about one of his stories with his daughter, we're closer, in this narrative distance sense, to the reader than the people in the seminar story?"

I nodded in an encouraging manner while she bit her lip and stared silently at the ceiling. "Okay," she continued, "then you and I and this conversation are sort of inside the near boundary of a hypercube, the big cube that seems to hold all the others, while the seminar story is inside the little cube that is farther away from reality?"

"Excellent!" I said, applauding with a few hand claps. "But that entire story configuration can undergo a fourth-dimensional rotation giving a reversal along the narrative axis."

My daughter now shook her head with positive motions. "That part I don't understand, and I never saw that Stoppard play you mention in there, either. How can that be done?"

"Easy. This fellow, Pilson, can simply read and represent this account of our discussion of the seminar story as something *he* wrote to show Professor Stang how two separate realities can be reversed along the narrative-distance axis. Right now, we're nearest to the reader and Pilson and Company are just created, fictional figures that we're dis-

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cussing, but if all this stuff I'm saying to you is actually written by Pilson, well, the rotation and reversal occurs and we're suddenly farther out along that axis of narrative distance."

My daughter grinned at that. "Hey, Dad, come on. We really exist." She waved her arms at the room walls. "I mean, it's all really here!"

I smiled back but shook my head. "As Mr. Pilson so astutely noted, that's all just words on paper."

I stopped reading and looked up at Dr. Stang, then said, "I wrote that last week, as a way of showing how this kind of inversion in the fourth, or narrative, dimension can be made, somewhat in the same way that Hamlet diddled with his little play inside the big one to prove a point."

Stang shook his head in angry irritation at my glibness and my obvious preparations. "You're beating me back into a trackless thicket of geometrical balderdash," he said, then turned to sternly face the rest of his class, spread out around the long table. "Well, well. Where are those heartless harpies, usually so eager to pluck the liver out of the tiniest new thought? Ms. Lee, surely you have not bought the snake-oil elixir this dreadful little medicine-show is touting?"

Miss Lee's calm and oval face took on its most serene and impassive expression. "I found the ideas ingenious and challenging," she said firmly, "though I have a weak background in mathematics."

I gave her a quick, tiny smile of thanks. Miss Lee entered each seminar as a skinny, silent lamb, but somehow by the end of our interminable day she was turned into a lion or, more accurately, into a super-cool dragon lady.

Dr. Stang now became petulant and paranoid. "So you're all joining him, eh? Planned it before hand, I suppose? How many of you find this concept of narrative geometry puerile, superficial, and the work of an intellectual charlatan? Raise your hands."

The room remained very still. Stang smiled with the dreadful avidity of a cat holding the best part of a mouse in its fierce mouth. "And how many find it clever, an interesting concept, and probably worthy of further study?"

Six hands went up together and Dr. Stang swallowed his yummy mouse. "Actually," he said in his most benign manner, "I thought it had a certain superficial ingenuity. And scholarship *must* progress! For our next seminar, in addition to the assigned readings in Piaget, Wittgenstein, Barthes, and Lévi-Strauss, each of you five will bring in an essay showing the application of a geometrical concept to a specific literary situation, or the application of a literary situation to a concept of geometry. This will be a cooperative effort. Each will do a different concept. That is, I want five *new* applications, in addition to any we may discuss here today. Is this all understood?"

A low moan of disgust and dismay swept over the group and a small voice said, "Sir, Thanksgiving is next week."

Stang only snarled irritably. "So what? You have two weeks instead of one to do a decent job. How long does a damned turkey gluttony take, for God's sake, a couple of hours?"

Miss Lee had acknowledged my brief

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smile of thanks with a modest relaxation of her almond features and, almost, a nod, but now she turned stiffly to her notes, her expression set in annoyance that my ego trip had probably cost her both sleep and peace of mind. The others around the table gave out the surly grumbles and mutterings of the sort that once surrounded the tumbrels in Paris.

Dr. Stang, though no Tolstoy, was content with only an occasional boot in the face of his serfs. Now he turned to me with almost a Santa Claus look, his voice transformed and avuncular. "Ah yes, Mr. Pilson, a valuable lesson! How readily is the adulation of the multitudes turned to disgust and rejection by the prospect of work. The Geometry of Narrative is like thick, new snow; interesting and rewarding to see from a distance but not so much fun to actually shovel—if I make my various mixed and hidden metaphors clear?"

"Entirely," I said, "but you said five were to do the assignment. Am I to be excluded?"

Stang shook his head. "Not a bit. The others are mere beginners in this new literary science, albeit dedicated and enthusiastic students, as the voting showed. I am therefore allowing them to, let us say, go fishing through Euclid. In your case, I intend to provide a specific and assigned geometrical concept for you to relate to literary works."

I looked at him steadily and drew a deep breath. "Dr. Stang, I'll make you an offer . . . well, more of a wager, I guess."

He nodded warily and I went on. "You pose your geometrical concept and if I can provide the literary counterpart, right here and now, you agree to let me write the term paper on narrative geometry instead of semiotics. You will be the sole judge."

Stang gave me a dark and grudging nod and some new irritation appeared in his tone. "You have led me to this devil's bargain with skill and daring, Mr. Pilson. Very well, though reluctantly, I agree to your wager. The geometrical system I set for your consideration is the Möbius strip or so-called one-sided surface."

It had been a gamble, but not much of one. My notes on the science-fiction seminar showed that the only two purely geometrical ideas stressed in the stories were four-dimensional Euclidean space and the Möbius band, so I was ready for him. "Here," I said, handing up several sheets from my ring binder, "you can read these. I don't want to hog the spotlight all afternoon, Professor Stang."

My daughter put the manuscript down next to her on the sofa. "Dad, are we farther out in the narrative dimension than the seminar now? If we are, I don't see how I can comment on its story."

I shook my head. "The story is easily rotated and reversed again. After all, there's nothing that prevents me from writing Pilson's dialogue, so that he says he wrote our part. In fact, you've been reading the seminar story yourself, and you know it all came from my typer. I don't see any problem with convincing the reader that this is the outside, or framing, story and the seminar thing is what we're talking about."

"Then," said my daughter, "I think you've got a problem with this new geometrical system, the Möbius strip. The

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other examples you used involved solids, spheres inside of spheres and solid boundaries of a hypercube, but this is a surface, a two-dimensional thing."

"As Pilson would explain," I responded, "though I can just as easily do it for him, a Möbius band is a two-dimensional surface, half-twisted in the third dimension, and joined to itself. If you take a three-dimensional space, say a tube of space, and twist it once in the fourth dimension and then join it to itself, you have a kind of Möbius space. If a person were to traverse that space, two things would happen. They would return to where they started and they would be reversed when they got back, made a mirror-image of themselves. Okay, if a work of fiction can be constructed to logically turn back on itself, to repeat itself, but after the repeat, it has been mirror-imaged, then you have the narrative analogy."

She frowned. "But how can that be done. . . ?" and at that moment several knocks sounded at the front door.

"That must be Frank," said my daughter. "We're going for a pizza and then to the flicks." She jumped up and soon brought a tall, good-looking young man into the room. "This is Frank Pilson, Dad," said my daughter. "He's a Ph.D. student in English Lit."

I shook his hand. "Listen, Mr. Pilson," I said. "You folks have plenty of time. Let me get you a drink and you can read my little story, which might be something right up your alley."

"That's right, Frank," said my daughter, "it's about an English Lit grad seminar," and she handed Pilson the manuscript.

I mixed his drink and set it down next to him, but he did not take a sip for several minutes, then looked up with a big grin. "Hey, professor, this is great stuff," he said. "Listen, can I get a copy of this? I'd love to try and pull the Geometry of Narrative out of the hat for old man Stang, who runs this completely incomprehensible seminar on useless lit-crit theories."

"You think he wants another useless one?" I asked.

Frank Pilson nodded with enthusiasm. "I'll mousetrap him with it. I can do this stuff. I've read lots more science fiction than Stang, so I'm way ahead on weird geometries."

"I'll send you over a Xerox," I said. "Just don't mention my name to Professor Stang. Since they started cutting off the English Department's legs by attrition and giving us the positions, Dr. Stang has been talking in the faculty senate about a final solution for Engineering and Computer Science. Something involving high levels of radioactivity, nerve gas experiments, and the forced ingestion of PCBs, I think."

Pilson grinned again and nodded. "They sure hate your guts, all right. That must be why they're deconstructing literature. Sort of the trapped fox chewing off its own leg."

My face must have shown puzzlement at this comment, but my daughter spoke with an impatient shake of her head. "Deconstruction, Dad, is some nutty new kind of literary theory. Don't get Frank going on that stuff. He's rabidly against it."

"I like people who are against new things," I said firmly. "For example, I positively hate the metric system . . ."

But my daughter was on her feet and

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pulling at Frank Pilson's hand. "You two are *not* going to just sit here and complain about everything. C'mon, Frank, time for pizza."

At this point, return to the beginning of the story, with the words, "The graduate seminar, 'Modern Critical Theories,' (Eng. Lit. 674, 3 Cr.) theoretically occupied . . ." and continue reading until you reach the words, spoken by Professor Stang, "Very well, and reluctantly, I agree to your wager. The geometrical system I set for your consideration is the Möbius strip or so-called one-sided surface."

After he read this instruction aloud to us, Dr. Stang peered directly and blankly at me, and I saw that I had finally lost him in my final thicket of narrative geometry. I spoke up in my best exegetical voice.

"Look, the fiction has to loop, since the Möbius space is closed, right? So I write myself into the author's story, get from him the idea, in fact the complete seminar story, of narrative geometry and bring it here to try out on you." I paused and pointed a confident finger at Dr. Stang.

He nodded silently and I went on. "So there are *two* seminar stories, the one the author wrote and I read when I went to take his daughter on a date, and the one we have all just lived through."

I stared around the table with determination. "But they are the *same* story! Their congruence completes the Möbius loop in four-space."

Old Stang came right back at me. "And the mirror-image reversal, Mr. Pilson, as required by the four-dimensional twist in the Möbius space?"

I nodded and grinned in admiration at his quickness. "I instructed you to stop reading before the author's part, the second time around, Dr. Stang. You said then, 'I set for your consideration the Möbius strip . . .' Okay, I've given you a fiction that, as we saw, looped, and you have to admit that at this moment we are much nearer to the reader, in my narrative distance sense, than is the author and his daughter. Yet when the loop was started, when I read the author's story in his home, that part of the fiction was certainly in a nearer narrative space than this one. Now the thing is reversed. My two-narrative fiction has been made a mirror-image of itself."

I let my voice deepen. "Indeed, we may be the first persons to ever traverse a Möbius-space narrative in the entire history of English Literature!"

Professor Stang glanced up at the clock, which showed five-twenty, and when he looked back I saw that he was suddenly tired. He gave me a wan but real smile, which I returned. "I will look forward to your extended disquisition on narrative geometry, Mr. Pilson." He paused and peered with almost a benign grin at the rest of the class. "And to your more modest explorations of this topic."

As we got up to leave he lifted a hand. "Oh, and don't bother about those assigned readings for the next time. Just get your Euclid and show me how Mellors and Lady Chatterly can be understood as similar, even congruent, triangles," and he gave us an almost raffish wink.

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This upbeat ending of the seminar brought on a rapid and friendly chatter as we gathered up our things and headed for the door. I was surrounded and in the lead, since I would end up as the one who found them all some sort of geometrical scam to match against a literary one, and we all waved cheerful good-byes in the hall.

But Miss Lee waited, and when the others had rushed off down different corriders, turned to me with her most serious and impassive look. "Mr. Pilson," she said, "do you really think it was appropriate to leave the author and his daughter at a greater narrative distance than ourselves? That seems to me—well—unfair."

I blinked cheerfully at Miss Lee. "Do you really think so? I always thought that authors enjoyed living in some different and distant reality. But if the idea bothers you, I'll ask his daughter about how he feels. We're going to get some pizza this evening and then see a flick."

Miss Lee stared at me for a moment, then turned and almost fled down the south hall toward the science quads. As she dashed off, I saw that her shoulders were shaking violently, but whether from profound grief or convulsive laughter I could not tell. As for myself, I set out briskly and in high spirits for my date. Not only had I achieved a total victory over the formidable Stang, but I had, at long last, outpaced Miss Lee in our never-ending inscrutability battle. That *was* a triumph! ■

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ON GAMING

Dana Lombardy

Do you have an active imagination? Like to solve puzzles? Enjoy mysteries? If so, your interest in SF may prove a decided advantage in winning one of the most unusual treasure hunts in recent times, and it all centers around a game.

Treasure of Unicorn Gold by Metagaming Concepts Inc. (Box 15346, Austin, TX 78761) is a fantasy adventure containing the clues needed to locate a hidden "unicorn artifact" and win a $10,000 cash prize from Metagaming.

If no one discovers the treasure by September 1, 1984, Metagaming will remove the unicorn and announce its hiding place. The prize will then be awarded based on a random drawing from "Unicorn Seeker" postcards provided in the game, which players mail to the company.

While unusual, this contest isn't unique. Metagaming has done it before. In August 1980 the company introduced *Treasure of the Silver Dragon,* a treasure-hunt game that consisted of a hidden, two-pound silver metal dragon plus a cash prize of $10,000. The dragon was a one-of-a-kind art object, itself worth more than $3,000.

Within two months the dragon was located by Thomas Davidson, a chemistry major and Ph.D. candidate who bought a copy of the game as soon as it appeared. His science background and interest in SF helped him solve the puzzle.

While there were other clues in *Treasure of the Silver Dragon* (hidden throughout the game components), the major one Davidson deduced was the connection between the emphasis on solar energy used by the dragons, the repeated references to the sun throughout the adventure, and some special buildings critical to the game. He reasoned that solar observatories could be the key.

He and his girlfriend took a bus to Sunspot, New Mexico, where there is a solar observatory. After buying a shovel and renting a car, they proceeded in their search.

Using the map in the game, they calculated the area they wanted to search was about one and a half miles from the observatory. The game's map guided them once they were in the right area. Runes on a stump near the burial site told them they were very near.

After some digging, they discovered a metal box about one foot below ground level. Inside, solidly encased in wax, was the silver dragon. Instructions in the box told the finder who to contact at Metagaming. A struggling graduate student had suddenly become $10,000 richer.

Metagaming was determined that the next treasure hunt would be tougher. Introduced one year later in August 1981, *Treasure of Unicorn Gold* remains unsolved. The game is a sequel to the first treasure-hunt adventure, but all the clues needed to locate the unicorn are in the second game. Having *Treasure of the Silver Dragon* can provide

(continued on page 91)

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The Alternate View

The Sky Is Going to Fall

G. Harry Stine

Although I'm as staunch a supporter of our space program as my colleague, albeit in a somewhat different manner, I've tended to let Dr. Jerry Pournelle exhort the multitudes herein because he does such an enthusiastic job of it. However, during the past few months I've become aware of a space program crisis in which you, dear reader, can truly be the focal point and, if you will do it, can really keep the sky from falling:

There is a definite, finite probability that one of the four NASA Space Shuttle Orbiters is going to prang.

This isn't the "contingency landing" scenario that Lee Correy used in *Shuttle Down* (*Analog*, December 1980–March 2, 1981). This is the Big One, the loss of the entire Orbiter along with two to seven people aboard; the total wipe-out of 25% of the U.S.A.'s manned space capability; and perhaps, depending upon the scenario, people and property on the ground as well.

How it happens is really inconsequential, insofar as we're concerned here. (Of course, it *is* of utmost, overarching importance to NASA and the various NASA contractors involved, as well as to the Department of Defense, the Department of State, and a dozen other governmental and international organizations.) The Space Shuttle system is incredibly complex. There are a lot of things that can go wrong, that can be overlooked during pre-flight checkouts, or that can fail without warning. There are probably little Apollo 13-type unknown and unsuspected built-in engineering accidents that can't be spotted until Houston is informed of the problem. As the number of successful flights increases, there will be the inevitable tendency to ease off because of growing familiarity with and trust in the system. There are so many "failure modes" in the system that, sooner or later, all the tolerances are going to end up on the short end along with the MTBF (mean time between failure) of critical parts. Don't tell me you've never gotten an 8-32 machine bolt that was too big for its accompanying "matched" 8-32 nut because the bolt was on the high side of the tolerance limit and the nut happened to fall on the low side; it happens, and it gives engineers and quality control inspectors nightmares.

The catastrophe probably won't occur because of "pilot error," the catch-all excuse far too widely used by the National Transportation Safety Board in relation to aircraft accidents. It will be a few years yet before shuttle crews grow to be as outwardly, professionally

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cool and inwardly over-confident as some airline transport pilots have become today. When the shuttle goes boom, it will happen in spite of the efforts of a brave, competent crew of heroes-to-be.

Okay, so we lose an Orbiter and up to seven people. So what? More than 50,000 people are routinely killed every year in and by automobiles. In 1982 a Boeing 737 whanged the 14th Street bridge coming out of Washington National Airport. Hardly a day goes by that some pilot, military or civilian, doesn't misjudge something and end up as a smoking hole in the ground. Death and destruction are parts of our civilization. A major transportation accident is a sixty-second segment on the evening network TV news, following which it's promptly forgotten except by grieving friends and relatives, grim-faced public safety officials and investigators, and a stable of insurance adjusters and lawyers.

Not so the shuttle, when it prangs.

The shuttle is very big, very expensive, and very new. It is part of the space program which has been a prime target for many TV network executives, producers, reporters, and researchers since about, oh, say, 1967 or thereabouts when it became obvious that the United States was at least even with the Soviets in space, when the "news value" began to wear thin with the media people (but not with the public, who continued to throng the beaches on launch day), and when loud voices began to complain that the money should be spent on *their* pet projects instead. "Like, let's get some cash into Harlem, man."

Although the space program (along with the defense program) is a massive government-supported jobs program that really works by upgrading people's skills in the highest of high technology (and during the 1960s was a highly successful poverty program in Dixie), workers have to have some smarts in the first place to benefit from it, although nearly all workers including ditch diggers can and have. This kind of technology-based jobs program isn't at all understood by a surprisingly large number of important, influential, and critical people sitting behind desks in Manhattan and making the decisions concerning what news events will be reported *and how they will be covered.* They don't like the space program because they never could understand how a manned lunar landing mission could be accomplished to within a second of a predetermined schedule (you should see how they go about scheduling a thirty-minute network newscast every day!). They don't have the foggiest notion about the rôle technology plays in our lives, even when they book satellite time for a live report from war-torn Lebanon. I'm not even sure they know how all those pictures manage to squeeze themselves through those little bitty wires in the first place. . . .

When the shuttle prangs, it will be the media event of the decade. And very little of what is reported will tell the whole truth, be unbiased, or show the slightest comprehension of human nature. (Don't tell me you've already forgotten the abysmal on-the-spot coverage of the "attempt" to blow up the Washington Monument!) It will be the opening gun of the final assault aimed at destroying this expensive boondoggle.

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Because of restraints imposed by law and administration policy, the people of NASA—most of whom are indeed dedicated; you've *got* to be dedicated to put up with those restraints and still stay on the job—will fight back as best they can with both hands shackled behind their backs by policy.

And this is where *you* come into the picture, if you believe in a better future without a world of limits which inevitably lead to totalitarian control over your lives, if you believe in brainpower over muscle power, and if you care about the sort of future you and your children will live in.

This is when the crunch comes, and when *you've* got to do something.

Okay, you're busy and you can't do much. Do as little as possible, but *do it*.

We know the shuttle is going to prang in spite of every possible precaution, so it isn't like getting caught unawares by Sputnik. Take advantage of this fact.

Counterattack.

The national news media will be spearheading the attack. They honestly believe they can sway the fate of nations and hold the world in the palms of their hands. After all, starting with getting a president of the United States to resign the office, they've been hugely effective in molding public opinion and affecting world events (they believe).

But they're also vulnerable in their own media, because they can't control it all. In a world of plenty, which is the reality of today, nobody can.

The local news media and, to some extent, some portions of the national media are accessible to almost everyone.

This is the lever you can use, if you plan for it. But you must do a little homework first. When the balloon goes up, there won't be time. Marshal your thoughts, arguments, selling points. Get your facts. Line up your ducks.

When it happens, use the media to get to as many people as possible in the least amount of time with the least amount of energy.

Get on the call-in radio talk shows. Use any excuse you can, but get on the air. Then talk. Homework: Get a list of talk shows, their hosts, their call-in numbers, and their air times.

Work the local print media. Homework: Find out who the editor is, communicate with him on some local issue ahead of time so he gets to know you, and gain his trust. When the sky falls, go talk to him. Offer to write something for him. At least write a letter to the editor.

Local civic organizations—Rotary, Lions, Kiwanis, Optimist, etc.—are usually hard-up for weekly luncheon speakers. Get to them ahead of time and give them a space shuttle talk. Let the program chairman know you can be called upon at any time to talk if something important happens. When it does, call him. He can get the local TV, radio, and newspapers to cover your talk.

There will be the usual campus uproar, and here's where the students among you *must* get lines of communications set up in advance so that when it happens you can get quoted in the campus newspaper or insure that you're seated on the panel that discusses it. And if there isn't a panel called to discuss the tragedy, organize one. Get the campus media to cover it.

Don't bother with your congressional delegation at this point. They've already

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got data inputs from their staff members who will have been briefed by NASA. Individually they'll react in a predictable fashion, and a call or letter from you at that point won't have as much impact as your efforts to blunt the national media attack and influence the grass roots opinion which will get to your congressman or senator. There's not too much that will happen before the next budget go-around anyway. When you get more time as the furor of the battle dies down, then write your congressman about it.

In *The Hopeful Future* (Macmillan, 1983) I present the full rationale concerning why a future in which we manage to solve our current problems cannot occur without the development of the solar system. But the future—any future—no longer just has to happen willy-nilly. We can plan for it. We can make it happen the way we want it to. But we have to do it.

I've just outlined how you can do something. I hope that the occasion never occurs. But we'd be stupid if we played ostrich, and I don't think the readers of this magazine are stupid. Biased, opinionated, crazy as pet marmosets, brilliant, fascinating . . . but certainly not stupid. Especially not stupid enough to let some really short-sighted people take away the future. ■

● Usually when we start a serial we base the cover on it, but once in a while we have a good story which just doesn't lend itself to that as well as something else in the issue. One of the things a cover is supposed to do is proclaim to anyone walking past a newsstand that behind this cover lurks a science fiction magazine; and in the case of Joseph H. Delaney's two-parter, *The New Untouchables,* the setting is so close to here and now, and the nature of the scientific speculation such, that it's hard to make that obvious in a painting. But the story is nonetheless very much science fiction, very thought-provoking, and very timely. Not too long ago there was considerable furor over the John Hinckley case and what it seemed to imply about the use of insanity as a legal defense. But it could be worse. Suppose somebody learns how to determine *in advance* who is *likely* to commit crimes that could be defended by an insanity plea. . . .

September's cofeature which does get the cover is Thomas R. Dulski's "In Whose Name Do We Seek the Quark?," an alien contact story decidedly unusual in both content and treatment. And Poul Anderson has a fact article on "Science and Creation," which gets a little more specific about the scientific elements of the controversy—and in the process provides a good reminder of some considerations on the philosophy of science which are too often forgotten by both sides.

IN TIMES TO COME

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TWIN PARADOX

Dr. Robert L. Forward

It isn't really
a paradox, of course;
space travelers
really do age
more slowly. However . . .

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"Marcia! Stop that blubbering! You know I don't like to hear women carrying on like that."

Alan Armstrong bent his well-muscled arm, and with a firm forefinger pried the tear-streaked face of the beautiful brunette out of the curly golden fleece on his bare chest.

"But you're going away for so long . . ." she sobbed. ". . . that by the time you come back I'll be old and wrinkled. I want to go with you."

"Now don't be silly, beautiful," Alan said. "You are a wonderful actress, but you're not an astronaut. Besides, *Bright Star* may be the largest spacecraft made by man, but nearly all of it is fuel. The cockpit can only hold one man. It would be fun to take you along, but I'm afraid you'll have to stay here." He raised his finger farther, and leaned back to look at her tilted face.

"I have to go to the press conference in a few hours," he said. "So I'll give you one last kiss. While I'm gone, you'd better pack and leave. I've sold the condo and furniture and have the money invested. I was able to get eleven percent interest. When I get back in seventy-six years, my half million will be worth more than one billion dollars." Alan tilted Marcia's face even further, dazzled her with a boyish smile, then gave her a lingering kiss she would remember forever. With a soul-rending sigh, he climbed from the bed and headed for the closet, leaving Marcia sobbing into the pillow. By the time Alan had finished dressing, Marcia had calmed down.

"You'd better take the Liberian Sword," she said. "I'll need the Nissan Continental to carry all my stuff. Fortunately Mom still keeps my old room as a guest room."

Alan continued to check his appearance in the mirror as he replied. "I sold the Continental, too. You'll have to take a taxi."

Ten years earlier, radio astronomers around the world were astounded as the frequency spectrum around the hydrogen line was suddenly saturated with hundreds of narrow band signals. They came from the direction of Arcturus, a giant red star some thirty-six light years away. Someone remembered that the first commercial television programs had started seventy-two years earlier in the early 1940s. The Arcturians must have picked them up and replied.

The signal exactly on the hydrogen line contained a primer that started with numbers in a base-twelve system and proceeded through boolean logic into a formalized language. As soon as the language lessons had progressed to the point where simple messages could be understood, the primer beam told the scientists what information was on the other beams and how to decode them. One channel contained copies of the TV programs that the aliens had intercepted. Shortly, "Howdy Doody," "Milton Berle," and "I Love Lucy" were reruns again, with a time lag of seventy-two years. Other channels contained specialized knowledge on various branches of mathematics, physics, engineering, chemistry, biology, and astronomy. They didn't go too far into the subjects, though, as if the Arcturians were trying to prevent culture shock. All the channels repeated after a few months.

The main message was a simple one.

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By pictures and the logical language that was taught on the primer channel Earth was told that, if it could develop the technology to send a single human being to Arcturus, then the Earth could join the galactic civilization. The human ambassador would be brought back in one of their spaceships that would also carry the Arcturian representative to the Earth.

After some initial squabbling, including the covert destruction of some radio telescopes in a vain attempt to keep secret the knowledge in the beams, the political entities on the planet finally patched over their differences. They joined together to build *Bright Star*, the first interstellar spacecraft. The human race was in a hurry to cross those thirty-six light years to Arcturus, so the starship would accelerate at one Earth gravity until it reached its coast velocity of ninety-nine percent of the speed of light. *Bright Star* used a fuel made of ninety percent hydrogen and ten percent antihydrogen. To make the antimatter, the particle beam weapons and giant killer lasers on the orbital forts encircling the Earth were moved to Mercury and converted into sun-powered antimatter factories. Slowly the cryogenically cooled superconducting magnetic bottles filled with the antihydrogen fuel.

After a well-publicized worldwide search, and despite Russian, Chinese, and French grumblings, the U.S. astronaut Alan Armstrong became the world's first ambassador to another race. After ten years of work, the antimatter tanks on *Bright Star* were finally full, and it was time for him to go.

Alan strode onto the brilliantly lit platform in the NASA press room and sat calmly in one of the two video-swivel chairs there. Most of the world's ten trillion people were watching him over the global TV hookup. Alan was introduced by the director of the *Bright Star* project, and questions started from the invisible cloud of newstapers on the other side of the stage lights. Some questions were thoughtful ("Will you converse with the aliens in the logical language used in the radio messages, or will you expect them to have learned English from our television broadcasts?"). Some questions were trite ("Will you miss your girlfriends?"), and some were stupid ("Aren't you afraid the Arcturians will make slaves of us?"). Alan adroitly fielded them all, using a combination of his ready wit and dazzling smile.

The questions finally died down, and it was time for the part of the press interview that Alan was dreading. He knew it was necessary, for it would never do for the press to think that he would go off on a seventy-six-year journey without at least saying goodbye to his brother. Besides, there was that ideal human-interest gimmick built into the interview: a real-life example of the Einstein Twin Paradox. For his brother, Able Armstrong, was his twin—an identical twin—or, at least, he used to be.

A door on one side of the room opened, and Able limped in. Alan flinched inwardly as he stared at the mutilated caricature of the handsomely symmetric image that greeted him in the mirror each morning. Able hobbled his way onto the platform and stuck out his right hand at Alan, while supporting

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himself with a cane held in his good left hand. Alan rose and bravely shook his brother's mutilated paw, its only appendages being a stump of a thumb and a reconstructed little finger. Alan assisted Able into the video-swivel chair next to his and sat down again. He turned his face so he was half facing Able and half facing the video cameras.

Able spoke first.

"I hear you have the hottest rocket this planet can make. Make sure you check the seams on the casing before you light the fuse," he joked, the grin below the eye patch twisting his face into a distorted grimace.

Alan felt light-headed and the room of bright lights faded. The face of his twin wavered and grew bloody as Alan's mind recreated that terrible day back in '94 when they were kids. The two had made a crude rocket from a piece of pipe and some gunpowder stolen from their father's closet. They had lit the fuse, but nothing happened. Alan, being the oldest by a few minutes, told Able to go take a look. As Able picked up the homemade rocket, it blew up, taking his right hand, right eye, and most of his left kneecap.

Alan had gone on to fulfill the promise of their joint genetic inheritance. He had become an astronaut and now was designated as the first human ambassador to another civilization, while Able had to be content with an engineering degree, building the rockets that he would never fly. The vision faded, and after a pause that had the newstapers curious, Alan replied.

"With you building 'em, Able, I don't have to worry."

"What do you two think about the Einstein Theory?" piped up the shrill voice of a newstaper. "Do you really think that Alan will age slower than Able?"

Alan started to answer, but Able waved his claw and replied.

"Certainly, he will," Able said. "Alan will be traveling most of the thirty-six-light-year distance to Arcturus at ninety-nine percent of the speed of light. At that speed he will be aging only one year for each eight years on Earth. Counting the nearly three years he will need to accelerate up to speed and slow down again on each end of the journey, it will take him thirty-eight years to get there. The aliens don't have faster-than-light space drives, so it will take them about the same time to come back. Alan will have been gone some seventy-six years, but will have aged only fourteen years."

"But that doesn't make sense," blurted the annoyed newstaper. "How can one person age slower than another?"

"I assure you it's true," said Able. "I use this time-stretching feature of high-speed travel every day, when I'm analyzing the lifetimes of the short-lived particles generated by the matter-antimatter reaction. Believe me, the time-stretching effect really happens. Einstein was right."

"Don't you wish it were the other way?" said another anonymous questioner hidden in the glare of the lights. "As it is, you'll probably be dead before your brother gets back."

Able frowned a little at the question, the eye patch adding a menacing touch. He started to reply, but Alan interrupted him.

"There are almost ten trillion people

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around the world watching right now," said Alan in a superior tone. "When I return, even the youngest baby now living will be a doddering old wreck, ready for the grave. Despite what the calendar will say, I will have the body of a healthy forty-two-year-old man. Unless I get myself killed in an accident, I will be the last man in the world to die of old age."

Next for Alan were weeks of parades through the major cities of the world. Every street was drab, but the gaunt, ragged crowds were ecstatically happy, for the crushing worldwide fifty-percent surtax that had been imposed to build *Bright Star* had been lifted. When Alan left the solar system, he would not only take the wishes of the world with him, but also half of the Gross World Product for the past ten years. The people of the world could then return to their normal lives, hoping that the investment that they made at such great sacrifice would be returned with interest to their great-grandchildren some seventy-six years later.

Far out in the outskirts of the solar system, Alan pressed the igniter button. Deep within the bowels of the gigantic ship, laser beams and electric fields gingerly teased tiny pellets of antihydrogen ice from their magnetic containers and shepherded them through superconducting channels to the engine room. The pellets sparkled slightly as they interacted with the random air molecules in the highly evacuated tubes.

The engine of *Bright Star* was invisible. It was made of magnetic fields in the form of a spherical thrust chamber connected to a bell-like rocket nozzle. The antimatter ice pellets were injected at high speed into the thrust chamber, where they met a stream of liquid hydrogen. The protons and antiprotons annihilated to produce a blast of charged elementary particles that were channeled into thrust by the magnetic nozzle before they turned into gamma rays.

The shielding for the superconducting rings grew red as Alan increased the thrust level, and the large radiators that gave *Bright Star* a dart-like shape took up the glow as they radiated the waste heat from the engines into empty space. It was three hours after Alan had pushed the ignition button that the light from the blazing exhaust finally reached the cheering, weeping crowds on Earth and a bright star blossomed in the sky.

Communication with Earth rapidly went from bad to worse. Even before Alan had started, the six-hour round-trip communication time from Earth to the parking orbit of *Bright Star* had made real conversation impossible. After eight months under acceleration, *Bright Star* was a quarter of a light year away from Earth and had reached sixty percent of the speed of light. It now took three months for a message from Alan to reach Earth, and longer than that for the reply to catch up to the accelerating vehicle, racing away at nearly the same speed as the laser beam message. Alan was now living, thinking, and speaking one and a quarter times slower than the controllers on Earth. Even with the computer applying corrections, communications became essentially impossible. As the last messages came through, Alan noticed that the controllers for his mission had been replaced with a bunch

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of youngsters. They were probably trainees, since there was little for them to "control" on this mission. They seemed to know their stuff, though. He also got a sign-off message from his brother, but it was sound-only; Able had been assigned somewhere off in the boondocks where the communication links weren't up to video.

Some seventy-five years later the world learned that its gamble had paid off. The primer channel on the hydrogen line stopped its idiotic repeating sequence of one, two, three . . . to report that Alan Armstrong had arrived and was now on his way back on the ship carrying the Arcturian ambassador. From the data that the Earth scientists could glean from the mission schedule, Alan would be returning on a ship that could accelerate at 112 times Earth gravity. Despite the aliens' technological prowess—including, it seemed, antigravity — they were still limited to velocities less than the speed of light.

It was only a few months later that the first strongly blue-shifted laser communication signals started to appear from the direction of Arcturus. By the time the Earth scientists had unscrambled the velocity-distorted, alien-modulated signals, the Arcturian spherecraft had arrived in the solar system.

As the alien sphereship carrying Alan and the Arcturian ambassador drew close to the solar system, Alan got a few chances to talk to the Earth authorities. He told them that the Arcturian base housed a multitude of species from all over the galactic empire. Many of the species were billions of years old. The Arcturian "ambassador" was an idealistic volunteer from one of the younger galactic species. It came from an Earth-like planet and could survive on Earth with minimal discomfort. Like all the galactic species that had "individuals," this individual was immortal. The ambassador would stay to guide the humans until they developed to the point where they could join the galactic civilization.

The alien sphereship docked in orbit a short distance away from Clarke Station. They boarded the station and the ambassador was led away, while Alan was met by a young man and a human-looking robot. The robot was made of shiny black plastic with a caduceus on its chest. Alan had been catching up on the news on his way in and recognized the robot as one of the specialized plasticoids that aided the human professionals.

"I'm Doctor Prasdner," said the young man. "We'd like to give you a quick checkup, then you can have a holovideo conference and get back to Earth." They led him to a small room. Alan looked around for equipment, but could see none. As the door closed, the plasticoid approached him and said politely, "If you will just unseal your shirt, the exam will be over in a few seconds."

Alan opened his shirt front and noticed that as he did so a number of tiny lights built into the front of the robot scanned his face and chest.

"May I touch your neck?" asked the plasticoid, reaching toward him. Alan noticed that the fingertips contained dozens of tiny sensors.

"Sure," said Alan. One hand of the robot touched the side of his neck with

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the thumb resting on the carotid artery. The other hand touched his head on the other side. The fingers were warm.

Nice bedside manner, thought Alan. He felt tiny sonic pulses passing though him as the robot moved its hands over his body.

"He is in excellent physical shape," said the plasticoid. "He can take it."

"Take what?" said Alan.

"Sit down," said Doctor Prasdner, motioning to a chair.

"Why?"

"Sit down," said the doctor. Alan sat down apprehensively. The plasticoid moved behind him and placed one hand on Alan's shoulder, where its sensitive fingertips could monitor Alan's vital signs.

The door of the room opened and a young couple walked in. The man looked just like Alan, except that he was only twenty-five years old. The look-alike Alan had a twenty-five-year-old version of Marcia on his arm.

"Hello, Alan," said himself.

"What's going on!" said Alan, his heart pounding. He turned to the doctor. "Have you cloned me?"

"No," said the copy. "I'm Able."

Alan looked back at him, then looked at the girl. ". . . and she . . ."

"Is Marcia," said Able.

"But . . ."

"Within one year after you left, the scientists studying the Arcturian biology channel stumbled onto the secret of the mechanism that the aliens use to prevent themselves from dying. Think about it. Only a civilization in which everyone lived forever could operate an interstellar commerce system based on spacecraft limited to speeds less than the speed of light."

"But your hand and leg and eye! And that can't be Marcia; she was over thirty when I left."

Able looked over at Doctor Prasdner.

Prasdner sighed and said, "Old age is caused by a set of genes that 'turn off' the body repair mechanisms. This 'death wish' is hard on the individual, but better for the species, since it allows room for new variations to arise. The longevity secret is basically a means to prevent the body-repair mechanisms from being turned off. Once the 'death' genes are turned off, not only do you stop aging, but your body begins to repair any damage that might have been done. In Able's case, even his missing eye and hand were regenerated. You can't even find a scar now."

"Wow!" said Alan. "You mean that I can get back those twelve years I spent cooped up in a one-man interstellar foxhole? Great! Give me the shot, Doc. Then watch out, Marcia. I've been away from girls for a long time. You'll sure look good decorating my billionaire's pad."

There was a strained silence in the room. Alan looked around at the faces.

It was the robot medic that finally spoke.

"To achieve longevity involves taking a culture of synthetic viruses that enter each cell and modify the genes to turn off the 'death-wish' gene," said the robot. "But the treatment has to be administered before you are thirty-five years old; otherwise it is not effective."

"That's why we didn't tell you on the way out," said Able. "It was already too late."

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Alan slumped in his chair. The doctor looked concerned and glanced up at the robot, its hand still monitoring Alan's vital signs. The robot remained quiet. Alan sat up, forced a grin, and gave a harsh laugh.

"Well," he said. "The joke's on me. I went away expecting to come back younger than my twin, but Einstein was outfoxed by the medics. But . . . I've still got a billion dollars and a lot of years to spend them in. How about it, Marcia? Shall we take up where we left off? That is, if you don't mind shacking up with an old man of forty-two."

Marcia held Able's arm even tighter, swallowed, and finally lifted her eyes to meet Alan's.

"I've been married to Able for seventy years," she said. "And we've just renewed the marriage contract for a thousand more."

"Alan needs rest," the robot said.

The doctors did their best, and Alan stayed alive and healthy for another eighty-five years. He died as he had hoped: of a cerebral aneurysm in the arms of a nubile-looking centenarian who was jaded with making love to youngsters. Alan's age was 191 calendar and 127 Einstein-adjusted when he died.

The Earth stopped its business for one day to watch the funeral of its first interstellar ambassador. There was more than one now, as the Earth slowly made its way into the lower echelons of galactic society. It was tough being the lowest culture on the totem pole, but that didn't stop the Earth from investing ten percent of its gross world product on research to find a faster-than-light drive. The drive was theoretically impossible, but the human race had never forgotten how to dream.

Able and Marcia still visit Alan's tomb at the spaceport in Brasilia every hundred years. There, on the long spire reaching up to the sky, are the words that Alan himself had chosen for his tombstone. The words were typical Alan.

"Here lies Alan Armstrong. He was the first man in the world to visit another star, and the last man in the world to die of old age." ■

● The coming of the polar night is not the spectacular rush that some imagine it to be. The day is not abruptly walled off; the night
does not drop suddenly.
Rather, the effect is a gradual accumulation, like that of an infinitely prolonged tide. The onlooker is not conscious of haste. On the contrary,
he is sensible of
something of incalculable importance being accomplished with timeless patience.

Richard E. Byrd

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State of the Art

ANOTHER WORLD OF SCIENCE FICTION

Joe Haldeman

I'm writing this in a small notebook on a cramped little tray hemmed in by smoked reindeer meat and cold Finnish beer. Seven miles over the Arctic Ocean, I'm in the warm belly of a Finnair DC-10, while below me unrolls a thoroughly hostile chiaroscuro of black water lanes crazing through blinding snow, as the icepack shivers apart in concession to spring. We would die down there in minutes if not seconds, and the only thing keeping us alive is a complex smorgasbord of loud machinery that gives disconcerting shudders and lurches every now and then. Yet for the first time in a couple of weeks I feel quite safe and comfortable: I've been two weeks in the Soviet Union.

Which is true but not fair. Intourist and the Soviet Writers Union, in the

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process of shuffling our group of science fiction writers and fans from Moscow to Kiev to Leningrad, went out of their way to make us feel wanted and important. And some warm times, as you sat digesting your fifth shot of vodka, as you smoothed yet another incredible pile of caviar onto fine-grained black bread—as you tested cultures by trading jokes and photographs—some warm times you felt almost at home. But then there would be a look. There would be a word said or, more often, not said. And the look or the word was a wall.

You are the aliens here.

We want your understanding, yes. But don't try to make us understand you. We already know what you are.

Part of this feeling was certainly projection on my part. No American my age, born at the end of World War Two and growing up in the Cold one, can look at the Hammer and Sickle and see simply a warm symbol of workers' solidarity. No one whose main exposure to the Russian language has been the scary, inflexible rhetoric of Stalin and Krushchev and Brezhnev can hear its musical lilt with simple pleasure. And if your leg carries a long twisted crescent of cheloid tissue, momento of a .51-caliber Russian machine gun bullet long ago shipped south, you will find uncomfortable the sight of thousands of Soviet soldiers massed for May Day celebration.

But it wasn't only projection of my own generation's fears and prejudice and memories; the others felt it, too, with birthdates from 1901 to 1964, black and white, V.F.W. to N.O.W. It was not just culture shock or linguistic isolation. It was real. It was a wall.

And despite all of my preparation, it took me by surprise, which I think is the point of this essay.

I have been not quite around the world in the service of science fiction, which is to say in self-service to my own career. (I hope next year to complete the circle with China.) With and without interpreters, I've sat with foreign cohorts and tried to penetrate the barriers of Serbo-Croatian, Japanese, Hungarian, and every common European tongue—not to mention the strange varieties of Oklahoman they speak in England, Ireland, Australia, and Brooklyn. By and large we have been able to communicate, because we share the metalanguage of science fiction. Let me give you some rules of its grammar:

All things change.

There is no thought that cannot be challenged.

Philosophy does not change reality.

The past is a closed and dusty volume. The future is real but malleable.

Die Gedanken sind frei.

Soviet science fiction can be good, but it applies a different grammar. Some things do not change. Some truths are not to be questioned. Phenomena inconsistent with Marxism do not exist. The past is our guide to the future; its essential character was predetermined by the wisdom of Marx and Lenin. And your thoughts are only free so long as you keep them to yourself.

Not all Soviet writers feel this way, of course. Just the ones who get published.

I found out that not much of my own work is publishable in the Soviet Union, even though it is generally critical of American values and often sympathetic

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to socialism. It sometimes treats things that don't exist, though, such as homosexuality,* and it is often negative if not downright seedy.

The one word that kept cropping up when we discussed science fiction with Soviet critics, editors, and publishers, was *kind*. This was emphasized in every formal meeting, and also came up when we were just sitting around our hotel rooms, speaking clearly into the television set. A work of art must be *KIND*. I finally objected, meeting with a children's publisher in Leningrad. I asked the translator what they meant by "kind"—in English, I explained, it is a rather broad word, encompassing shades of accommodating, empathetic, polite, benevolent, considerate, merciful. She said "Yes, of course," which was an answer we got to a great variety of questions, and told me the Russian word: *dobraya*, amplifying that by saying it meant "good will." My Russian dictionary at home adds the helpful definition "nice."

Most science fiction in the Soviet Union seems to be published under the rubric of "children's literature." When we asked whether that meant it was relegated to a second-class status, we got the same protestation everywhere (indeed it sometimes felt as if an approved script had preceded us from city to city)—children's literature must be *good* literature; its standards must be even higher than those imposed on literature for adults. I'd never deny that this can be true—if I've ever invented a character half as good as Long John Silver or Huck Finn, I'm not aware of it—but it doesn't really answer the question. A better answer was provided by the often-repeated assertion that one of the most valuable functions of science fiction is to instill an enthusiasm for science in the young, and prepare them for careers in science and engineering. Also repeated was the pleasant term "moral guidance."

People familiar with the history of American science fiction will hear the ghost of Hugo Gernsback in those two statements of purpose, but it's not the old-fashionedness of the attitude that is disturbing. Gernsback was just one brilliant cranky man, and the only power he had to enforce his attitudes was the rejection slip. A Soviet writer's manuscript is judged not only by an editorial board, but by committees of people whose primary interest in the work is not literary. If *they* reject your manuscript you can't just mail it out to another publisher. If they reject it with enough force, you may find yourself in a place where the postage rates are rather high.

Politics aside (as much as possible), this root assumption, that the moral content of a story has to be consistent with a predetermined formal dialectic, seems absolutely antithetical to the spirit of science fiction. A lot of good science fiction—I would like to think *most* of it—makes its philosophical points

**In one of the books I read preparatory to visiting Russia, the author tells of being shown a classroom full of third-graders who were diligently practicing their handwriting. Something about the sight bothered him, and after a moment he caught it: "Where are all the left-handers?" he asked the teacher. "Oh," she said with a smile, "we have no left-handed children."*

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obliquely and even outrageously. There is strong moral content in Delany's *Dhalgren*; in Ballard's *Crash*; in Wolfe's *The Claw of the Conciliator*—and if the truths we find in such works are not very comfortable, if they are unkind, they are no less true.

To mitigate that a little, it has to be conceded that any writer—any artist—creates his work within a framework of approved values characterizing the moral and ethical consensus of the most powerful stratum of his society, and all of his work is at least unconsciously affected by that consensus. You might even go so far as to say that most serious work is centrally concerned with such conventions, either reinforcing them or questioning them. Limiting the artist's universe to reinforcement, then, doesn't in theory prevent him from doing serious work. I would chafe under the restriction —probably find another way of making a living—and so would most of the writers I know. But we didn't grow up under so tightly controlled a society. It could be that a Soviet writer accepts political conformity as a condition of employment just as easily as I accept the condition that my work must be entertaining (when in my heart I would rather that it be important), with neither of us thinking too much about it in the day-to-day production of work. A cage can be made of exceedingly fine mesh.

I wish I could have talked freely with a Soviet writer. That was "not possible," another phrase we got used to. We met them only in very public circumstances, with translators and others monitoring what was said. The people we talked to in private were publishers, critics, and copyright-office people who spoke good English, had travelled to foreign countries, and were allowed to come up to our rooms unaccompanied. They didn't earn such privilege by voting Republican. If any writers were similarly privileged, they either weren't interested in talking to us or their English wasn't up to the job.*

It seems to me that a Soviet fiction writer must have a hell of a job in front of him, serving three masters at once. The work has to be ideologically correct, of course, but if the writer is a serious one he has to juggle that with the obscure yet compelling demands of an artist's sensibility and conscience. While those two balls are in the air, he has to add a third one, a crumpled-up balance sheet—because, sad shade of capitalism, if a writer's books don't sell he stops getting published. If he doesn't publish for a few years, the State compels him to take a useful job somewhere. (Though the State has some compassion; it does make allowances for illness, family problems, and age. In terms of material comfort and security, at least according to the picture the Writer's Union painted for us, a Soviet fiction writer is better off than his av-

** We were told that English was virtually the second language of the Soviet Union, with some 70% studying it in school. But outside of Intourist control, I made better use of German; very few people could, or would, answer the simplest question in English. This is not necessarily sinister. Foreign language is a use-it-or-lose-it proposition, and there aren't many opportunities for an ordinary Russian citizen to practice.*

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erage American counterpart.) I would love to compare notes with one of them; talk honestly about the tensions and compromises that lie between the thought and the book; compare the satisfactions and troubles that each of our systems offers its servants. The formal differences seem profound, but I suspect that if the map were taken off paper and translated into skull and soul, the territory would turn out to be the same. ■

ON GAMING

(continued from page 73)

useful background information, but the solution doesn't depend on using this game with the new one.

Treasure of Unicorn Gold is "MicroQuest 4" for use with the games *Melee* and *Wizard* in *The Fantasy Trip* role-playing series. While having these games and playing the adventure isn't absolutely necessary to deducing clues, they can help.

This MicroQuest comes with a three-color paper game board showing four regional maps. A forty-one-page rule book laced with runes, hieroglyphics, and Hebrew lettering has notes and information for solitaire or group play using the *Melee* and *Wizard* rules. Also included is a sheet of forty-seven cut-out cardboard counters representing monsters that can be encountered and one six-sided die.

The story: "Etherion, the great silver Dragonodon, is frozen in stasis under Sacramento Peak, victim of the Toltec Brujos. Yet man's hope lives through Miri the True and golden Xenon. Can your band of hearty heroes help them before cruel Yaoyotl strikes? Can you find the secret treasure of Unicorn Gold?"

Some important facts: The unicorn is hidden in such a way that trespassing is *not* required upon any private land. The unicorn is hidden so that its location, as well as access to its location, will not be dangerous. At that location it may be necessary to go upward or downward from the Earth's surface, but not more than five feet in either direction.

Here are some further clues not previously provided in print: A certain methodology and approach used in the first hunt proved relatively easy to decipher, so a different methodology of hiding the clues is likely to have been used in *Treasure of Unicorn Gold*.

Trying to solve the mystery through logic alone (or studying geological survey maps) won't help as much as playing and getting into the spirit of the game. The unicorn is said to be located somewhere in the forty-eight continental United States. The treasure is fixed in one spot; it doesn't move around. It could be under water, but not below wading depth. Presently there are several groups actively seeking the treasure. So far, they're on the wrong track, and part of their problem has been sharing information, which may have confused matters. So, in your search, trust your own judgement.

Nearly 30,000 games were sold. Only 3,000 "Unicorn Seeker" cards have been returned for the drawing. *Treasure of Unicorn Gold* is an interesting fantasy adventure, a challenging puzzle, and a possible drawing for $10,000. In short, pretty good entertainment value for a $5 game. ■

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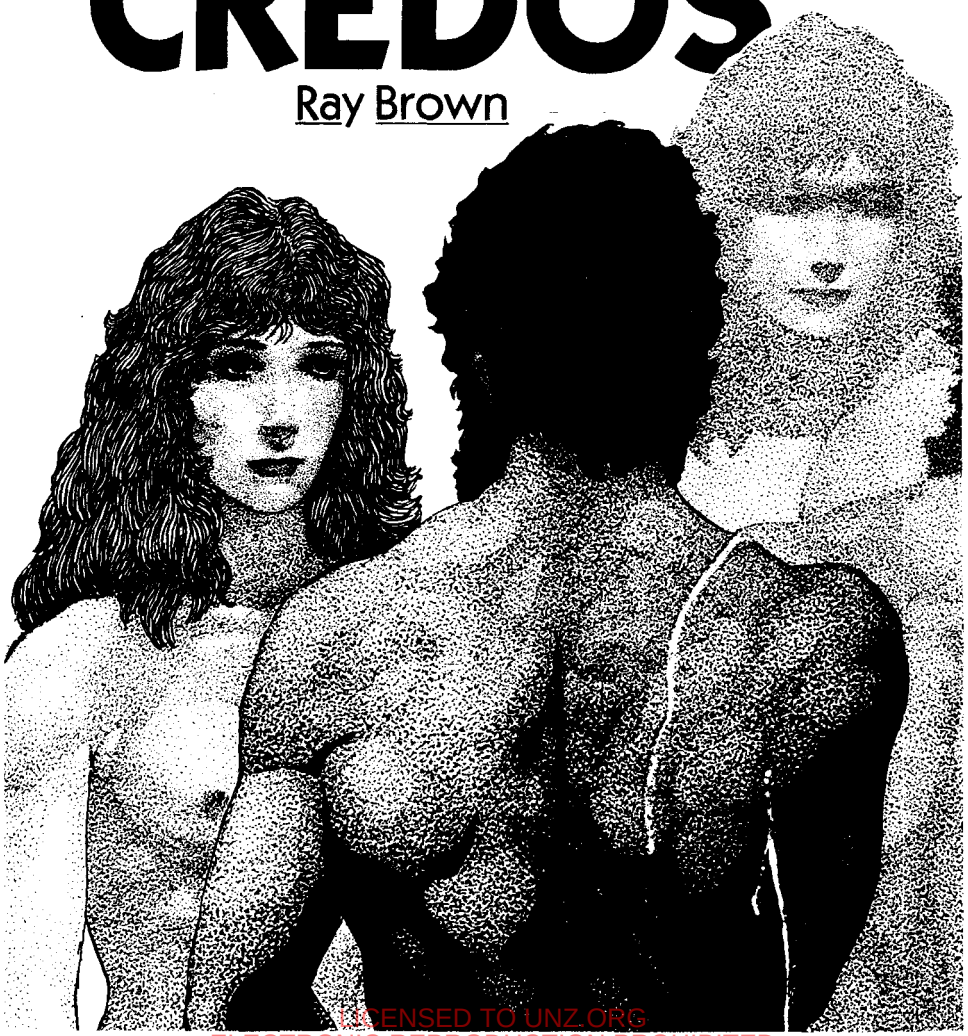
If certain phenomena
on the fringes of human experience
ever achieve the status
of useful technology, the boundaries
of science and religion are
likely to become very blurred.
And, for that matter,
those of reality itself. . . .

CREDOS

Ray Brown



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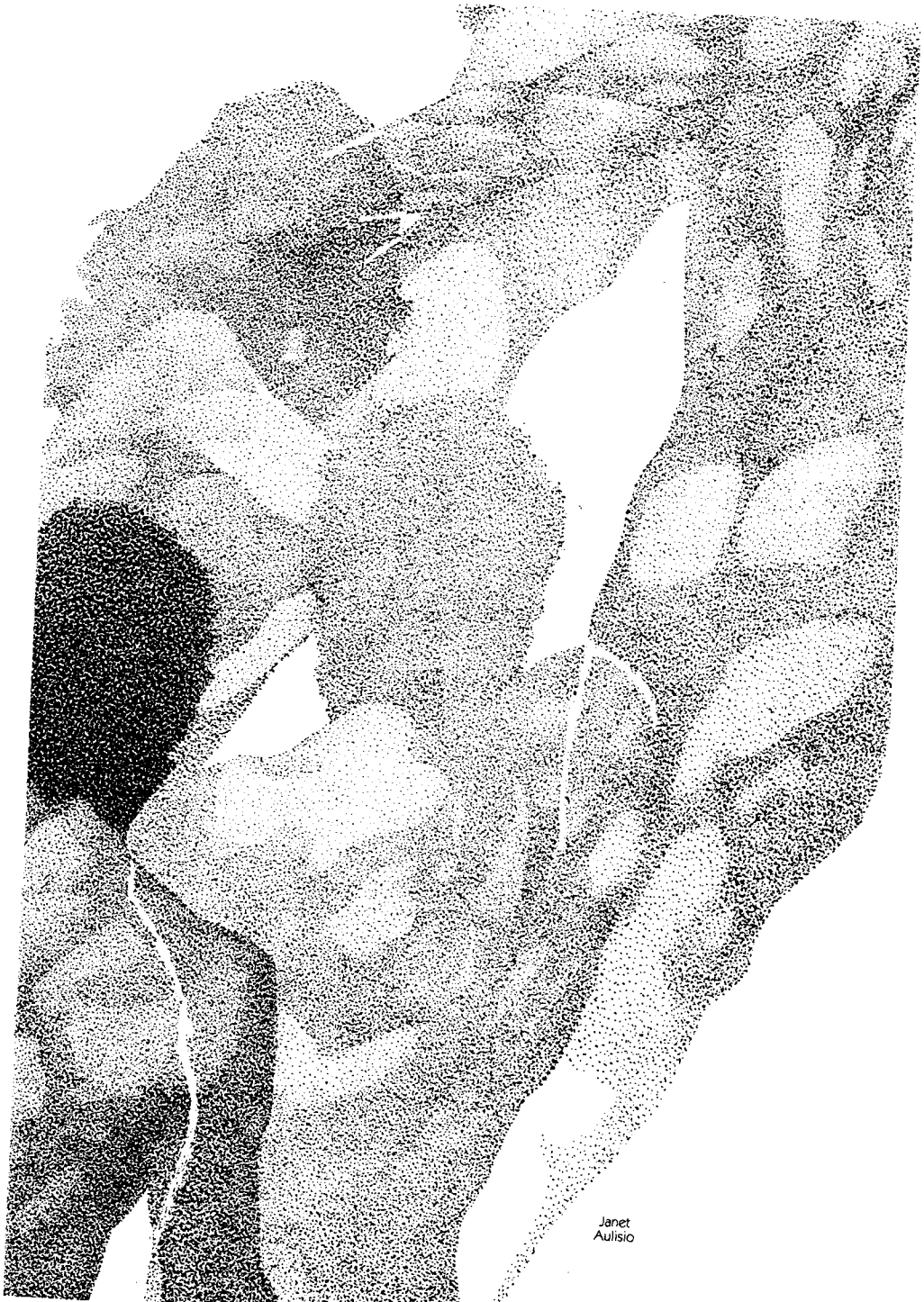

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". . . whoever says to this mountain, 'be taken up and cast into the sea,' and does not doubt in his heart, but believes that what he says will come to pass, it will be done for him."

—Mark 11, 23 (RSV)

When Laura DeWitt was little—so little she hadn't yet learned to think straight—one of the majority of enormous persons told her she was inhabited by a devil.

Laura wasn't even a little bit of a problem child. All she wanted back then was to be left alone with her tapes and PK link. But the enormous person was a superstitious refugee from one of the more backward areas of the U.S. — unskilled labor Laura's foster mother took on as a maid. (After all, the DeWitts themselves were descended from the previous outpouring of refugees from America to Schleswig-Holstein. It was the least they could do.)

This ungrateful lower-class dross was unable to understand the century of genetic manipulation that had gone into making Laura part of the first generation of real espers. All she knew was that Laura could read minds and—what was even more incriminating—that she was, even in that pre-pubescent stage, strikingly beautiful. Even compared to her lovely (but spooky) playmates, she stood out.

The maid wasn't hostile. She simply added up all two of the facts one winter evening and presented her conclusions to Laura along with a cup of hot cocoa, in the same voice she used to discuss the weather.

This outward show of reasonableness made the maid's theory even harder for Laura to deal with.

She brooded over it for about a year, off and on, looking without success for a way to test it. How would she know? Maybe there *was* a devil inhabiting her. Over and over she thought: *Would I be able to tell? And how do I know who just asked that question? When I say "I," maybe it's really just the devil inside me, talking to itself. Maybe the best thing "I" could do would be to get out of the way. Then the real me could take over.*

That was easier to think of than to do. She plugged away at it while the nightmares kept her short of sleep—and whenever she felt she'd squeezed her ego down to practically nothing a voice from Hell would ask her who was doing the squeezing and the "I" would be back again, bigger than ever. Eventually, though, as the horrors were buried under more mundane troubles, she grew bored with these zennish exercises and elected to leave her ego alone. If she really were a devil . . . well, then that was who she was, and why hurt herself? Besides, she got a charge out of having secret, infernal powers.

That resolved the problem, but only temporarily. After all, the idea that you might actually be an agent of pure evil isn't the healthiest thing to have floating around in the back of your mind.

Things came easy to espers, and for Laura things came extra easy. Korngold Industries found espers expensive to create, and so made only enough of them to fill high-paying positions within itself. Once they'd paid the initial expense, though, they found they could

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make them good-looking and super-smart for only a modest additional cost. So why not? And though Laura was only a fair telepath (it gave her headaches), she got more than her share of smarts. Unfortunately, by the time she learned to think straight, being a devil had become a mental habit; but not even that could stop her from shooting past her schoolmates.

Her unworldly beauty got her any *thing* she wanted. Unfortunately, she was so beautiful she scared all but the blindest males away, and these tended to treat her like a trophy. She got her revenge by using the promise of sex to manipulate them, and began to acquire a taste for that sort of thing. It seemed fittingly devilish. Every now and then, though, thinking of her love-life gave her an attack of the horrors.

The year she started working for Korngold, the career fad was to hook up as a liaison with Transmat, Inc., developing instantaneous transportation using esper-related technology. (ESP effects are instantaneous.)

Laura ignored fashion and chose ESPionage.

Being a spy is a piece of cake for a telepath, so Korngold found itself in virtual control of the world's spy network, renting espers out to all manner of companies and nations. The company joke was that the only real secrets left in the world were Korngold's. It was devilish work, and Laura figured she had to enjoy it, but every now and then thinking about it gave her an attack of the horrors.

Sometimes she'd have an attack of the horrors for no reason at all.

The attacks became more frequent, more intense. At the age of twenty-five she wound up in intensive telepathic psychotherapy for half a year. And when she got out, things stopped coming easy.

Her downfall began a week out of therapy as she stood, confused, at the bulletproof door of her boss' office, waiting to be admitted.

"Goddam Korngold and its two-headed shrinks to hell," she said.

She blamed them for her dizzy spells. Telepathic shrinking sounded good—two trained TPs worked as a team to overpower the patient's resistance, going directly inside his head to calm and fix it—but it turned out to be crap. They hadn't eliminated those flashes of terror; they'd just reduced their frequency. And she couldn't even begin to guess where they went wrong, because she literally could not think about those six months.

Now, waiting for the boss to buzz her through, she tried to think about not being able to think about them. No good. As usual, what happened was that her thoughts, in a very natural way, turned to the subject of her general ignorance. She was so awed by its extent that she was stupefied, and when the door buzzed open she clumsily wedged herself in the doorway, stuck between her purse and moodbag.

As she unstuck herself with a violent twist, she forgetfully tried to scan her boss and was forcibly reminded of one of the many reasons management and labor were growing ever farther apart. The telepathic jammer in her boss' desk blasted an advertisement for a doll on a local radio station into her head with painful force. "BABY SNUFFLES

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CRIES *REAL* TEARS!'' it screamed. The jammers were terribly expensive, but almost all upper management was non-esper and afraid of its own product.

She withdrew her probe, staggered into a molded chair beside the desk, and studied Carl Mixter, her boss.

''You sent for me?'' she asked.

Mixter was almost her age—a go-getting Swede who thought espers and their new technology were the hope of the world. The world's best chance for peace would come when Carl Mixter had all the secrets. He was blond and ruddy and poker-faced. She'd been his trophy a few years ago and had read his mind then. It spent most of its energy telling itself how resilient it was. The devil in her had liked that.

''You have an important assignment coming up,'' Mixter said. ''You're here to be briefed.''

Laura was unimpressed. Mixter had never given out an unimportant assignment in his life. ''What is it?'' she asked, flatly.

Mixter sighed and leaned forward. ''You know,'' he said, ''nobody at Korngold tells top-level management anything. In a way, I suppose it's our own fault. We isolate ourselves, to a certain extent. And with the world economy in the state it's in, people are scared to death of getting fired and so never tell us anything but yessir and nosir unless it's absolutely necessary. True?''

That was true of most organizations, she mused. But it was worse at Korngold, with its emphasis on espionage. The upper echelons told the lower only what they needed to know to do their little piece of a job. Things had got to the point where you couldn't write a memo on buying the janitor a new buffer without someone stamping ''SECRET'' on it. She nodded.

''And,'' Mixter continued, ''even when you ask an employee for a specific answer to a question, all you'll hear is what he thinks you want to hear. Follow me?''

Laura nodded again, repressing the urge to point out that if the company were run by telepaths that wouldn't be a problem. Well, there *were* those few non-espers who had natural blocks, but they were so small a minority they could be fired *en masse* with no trouble.

''Good,'' Mixter said. ''And in case you're wondering, these comments do bear on your assignment. You've been kind of out of it while you were getting psychotherapy at our expense, so perhaps you haven't heard of the Searchers. . . ?''

''The who?''

Mixter nodded. ''I was right. They're a quasi-religious group headquartered in America—Washington, D.C., in fact. You can't trust those people, you know.''

Laura nodded again, still unable to see where he was leading.

''You may remember,'' Mixter went on in the same, seemingly disconnected fashion, ''that recently I had the opportunity to travel by Transmat to our branch on Procyon V. I was astonished at the number of people there who belong to the Searchers. When I returned, I did a little more spadework and discovered that at this installation alone over a thousand employees have joined —all within the past few months. Ominous, no?''

''No. Why should it be?''

''Not a single one of those persons

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is an esper. They're all technicians and scientists and laborers. What's more, I've found out that espers are actively *discouraged* from joining."

"So you wonder what it is the Searchers are hiding," Laura said.

"Yes—but there's more to it. Think—why are all these people at *this* company, of all places, joining a pseudo-religious organization which actively discriminates against espers? Sound ominous now?"

"Yes, I've got to admit it does. Why haven't you fired them?"

"I suggested that when I made my report to the board, but Herr Korngold says not to. He wants to investigate these Searchers. He thinks we should get something definite on them—learn what we can before we let the cat out of the bag by firing them."

Laura didn't have to read Mixter's mind to know he was twisting the truth. She knew Korngold well enough to know that he probably asked for this investigation in order to clear his employees, who he liked to believe were devoted to him. Mixter was interpreting Korngold's orders for some end of his own. Mixter was relying on his jammer too much. It was making him crude.

"So you want me to snoop among the employees?" she asked.

"No," Mixter snapped angrily. "We've already sic-ed TPs on them, and all we get is religious mumbo-jumbo. Most of these people are just dupes. What we want you to do is fly to Washington, D.C., and investigate the Searchers' headquarters itself."

"What!" Laura was horrified. The last place she wanted to be was in the land of non-esper maids who could still, somehow, see to the center of her soul.

"Right now we don't have much on them," Mixter said, oblivious to her distress. "They seem to be a study group trying to sift out what's of value in occult literature and practice. For the past ten years they've been kicked out of town after town, generally eastward, until they ended up in Washington."

"The crazy generals like them, eh?"

"Well—they came close to being kicked out of there, too. *The Washington Post* was conducting a drive against some of the city's more outrageous con men, and they painted the Searchers as magicians, with religious overtones, for the gullible underprivileged."

"So you've got the story on them. What do you need me for?"

"We don't know what we've got," Mixter said. "Outrage is this paper's stock in trade. When the government prohibited any further outrage against itself they found another outlet, that's all."

"Oh . . ." she grunted, disappointed.

"And now—almost overnight—the Searchers are rich and respectable in the *Post*'s eyes. Our latest clipping simply says their leader, some hick named Isaac Bentz, is thinking of applying for recognition as a church by the D.C. authorities. They were sure that if he decided to apply, he'd get what he asked for. So the Searchers must have made some sort of deal with the Eastern States of America."

Laura thought. The ESA was one of Korngold's biggest ESPionage customers, so obviously you couldn't trust them. Maybe they really were trying to

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infiltrate Korngold through the Searchers.

"Why me?" she asked.

"Have you looked in the mirror lately?"

Laura grimaced. Mixter knew damned well she looked in the mirror whenever she was feeling insecure, which was often. She was so beautiful that she stayed beautiful even when she was a nervous wreck, and the mirror would show her gleaming jet hair, delicate bones sculpting clear, soft skin . . . her beauty was her anchor. It was the one thing she always had working for her.

"The reports are contradictory," said Mixter, "but Isaac Bentz *may* have a natural block. If that's so, you can still work on him with your looks. He dates your type."

"If he's got a natural block, then what's the sense of sending a telepath at all?"

"I only said he *might* have. In any case, there will be others at their headquarters who are readable. You're acting like you don't want to go, Laura. Why?"

"You wouldn't understand. What's my cover?"

"None. Only your telepathy's a secret. Go openly; tell them you're from Korngold. Tell them our suspicions about our Searcher employees. Keep it all very public. Tell them we want you to stick around, ask questions, and see what's going on for yourself. Tell them if they don't go along with our request we'll have no choice but to fire those employees right away—and it'll be *their* fault."

"That's blackmail!" she said, trying to feign outrage.

"No," Mixter corrected, smirking. "That's extortion."

On Laura's third trip to the Searchers' Building she noticed a trend—it was busier each day. This time, making sounds like gunshots in the breeze, a big banner stretched across the front that said "MISSION TO THE STARS." All the pedestrians on Eye Street seemed to be headed there. Today was the day Bentz had promised to make his decision on whether they were to become a recognized church or not, and the faithful were making pilgrimages from all over just to be there at the time. There were even a few outworlders. She was impressed. Transmat travel was expensive.

She was jittery, and got the straps of her purse and moodbag hopelessly tangled pushing through a knot of people at the door. Then she wove through similar knots to Lew Grady, the clown at the antique manual switchboard at the end of the lobby. Grady was at a different job every time she saw him. He seemed to know the place from top to bottom.

"Hello, Lew," she said.

Lew scowled through boldly drawn red lips and tugged at his yarn wig.

"He's not here yet," he said.

"I thought we made an appointment for two o'clock."

Lew gestured dramatically at the crowd in the lobby and raised his starburst eyebrows. "You know," he said, "your timing stinks."

"That's not fair!" Laura cried, suppressing a nervous shiver. "If your organization weren't growing—going through big changes, you'd probably

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never have come to our attention. I mean, you have to expect this sort of thing at this stage."

Lew snorted disgustedly, motioned her to a metal folding chair and said no more.

Laura sat, tried to unsnarl the straps of her bags, gave up, and pulled a hand mirror from the purse. She needed the reassurance of that mirror. Her confidence in every aspect of herself, even herself as an Agent of Evil, was shot.

Again, the past two days ran through her mind. The first time she met Isaac she'd been too busy presenting Korngold's demands to notice what was happening to her, and only had her attack when she got back to her hotel. The second time, when Isaac had called her back to ask, "Are you people from Korngold for *real?*" she had her attack in his presence. Her face flushed. Her heart beat fast. She itched with lust. Her breathing deepened. She missed half of what he said and came off looking like an idiot.

Now, in place of her comforting mirror-image, she saw a picture of Isaac and had another attack. The mirror slipped in her sweaty hands. *This job is a curse,* she thought. *I'm falling in love with him after talking to him two whole times.*

A fist closed behind her eyes, squirting out tears.

Extortion is mighty stony ground to grow love from.

She put the mirror away and shook the purse until the moodbag came loose. *The human soul always longs to love,* she theorized, setting the moodbag for mild elation. *And when you can't afford to love, your soul plays it safe by finding a hopeless love.*

Maybe.

She stuck her hand in, felt a prick at the ball of her thumb. *His natural block forces you to deal with him on old-fashioned human terms. There's romance in that. That's why you're falling for him.*

Maybe.

She shrugged angrily and pulled out. There wasn't much effect. Maybe it needed refilling? No, she'd had it checked at the airport at Hamburg right before she'd come to this damned country.

Lew was looking at her as if she were stock and he were the stock clerk, and she couldn't resist probing his mind.

It was hard. His mind was so calm it was disorienting. Everything seemed to proceed in a slow, sunny counterpoint of ideas, most of which were beyond her comprehension. Eventually, though, she wormed her way into the fugue and dug out what she wanted:

Another one with a crush on Isaac. Only this time, maybe it'll do us some good.

Laura blushed.

Lew pounced.

"So!" he said, "you *do* read minds!"

Her mouth flapped soundlessly. Where was the spy of a year ago? In the old days she'd have had him convinced in a minute that she was not only a non-esper, but that she had no brain at all.

"Don't worry," Lew said. "Nobody here will mind. It doesn't make any difference."

"But it does make a difference to the people outside?" Laura finally said.

"Well—it's not something I'd brag about, not in this city. It's the PK link.

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They're afraid of this new technology for ESP transmission. We've become very security-minded since the generals took over."

"But you don't have to be an esper to use the PK link . . ."

"When has prejudice been logical? Oh—I'd better warn you. I know you didn't register with the city as an esper, because I looked. The fine for not registering has been raised to $200."

"Huh? I didn't even know I was required to register."

Grady looked surprised. "They passed that law four months ago. Seems strange, somebody in your business not knowing."

Laura tried to remember what she'd been doing four months ago, and got what she always did when she concentrated on her period of therapy. Her vision blurred, sort of. Everything pulled away from itself and made a solid but unconvincing double. Each Lew, for instance, seemed perfectly clear, but she couldn't help feeling that one was the real Lew and one a fake.

"You don't look at all well," Grady said.

Laura watched her two left hands rubbing the slippery Procyon V nuzz-leather of her moodbag. It occurred to her that there was a real and a fake Laura and her mind, willy-nilly, began the impossible work of trying to sort out which was which.

A new voice said, "Maybe you'd better lie down, Miss DeWitt."

It was Isaac Bentz.

Again her heart kicked into high gear, and she started to sweat. Two beloved faces with enormous, concerned eyes bobbed over her chair, looking down at her, then melted into one. She felt dizzy.

"I'll be okay in a minute," she said. "I've gone through this before."

"Just a mild case of the vapors, I think," Lew said, grinning.

Laura stared hard at Bentz, obsessed by the thought that she was getting better because they were looking at each other. He was short and bulky, but good-looking if you liked the rugged type. Until she met him, she'd thought she didn't. He was flat-nosed—blacks in his line not too far back—and square-chinned with curly dark hair all around his face. His beard and the hair on his head looked exactly the same. His eyes were deepset and gleamed with intelligence and *healing power*.

Snap out of it, DeWitt, or it's back to the shrinks.

"That's an interesting moodbag," Bentz said. "I've never seen one like it before."

"It's a custom job," she said. "There aren't any others like it."

"Are you sure your bag's monitor isn't wearing out—failing to stop the injection when there's enough of a drug in your blood already? Lew says you should be wary of customized moodbags—that the standard Mr. Mood model is the most reliable."

"What does he know about it?"

"He works for Mr. Mood, remember?"

The dizziness was subsiding now, and Laura remembered. Lew's clown get-up wasn't just occult weirdness. He actually worked as a clown in Mr. Mood's fantasy department. A lot of people had fantasies concerning clowns.

"Maybe it's the moodbag," Lew was

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saying, "but I think the real reason is that I just caught her reading minds."

Bentz grinned. "Told you so, Lew."

So! Laura thought. *It was Isaac who figured it out!*

"How did you know?" she asked.

Bentz said, "It was just a guess I made, because I know the way companies that do a lot of esper business work. They grow addicted to the use of ESP. They'll send a telepath out even when it isn't appropriate, and make a big production out of it . . ."

"Korngold," Laura interrupted, "isn't exactly a small-time company using espers to suck in the rubes."

"Maybe not," said Bentz, "but they haven't exactly been logical. Your bosses knew from the start that I had a natural block . . ."

"No, they didn't."

"Well, they know it now. Why are you still here?"

"There are other minds here besides yours."

"Okay, then why didn't you just ask the Korngold Searchers about us, instead of coming all the way across the ocean?"

"They follow what you say."

"No, they don't. They follow what I *write*. We send my pamphlets over there in twelve languages, including German. And if you've missed some of the old ones, they're all coming out together in a book—it'll be out as soon as I finish the revisions. So what do you need to hang around here for?"

"Hey," Laura said. "You're approaching this with the attitude that you have nothing to hide. But how can Korngold know that? And that's really the whole issue, isn't it? I mean—if you have nothing to hide, you shouldn't mind our mistrust. Let me hang around. Change our attitude."

Bentz frowned. "If I wasn't so busy . . ."

"Maybe I should add," Laura interrupted, "that some folks at Korngold —my boss, for instance— would like nothing better than for you to say no. Then they could just fire the Searchers, claim it was all your fault, and stop worrying about it."

Bentz's frown deepened. "You don't give me a hell of a lot of choice," he growled. "Okay. You can tag along with me during working hours. Will that satisfy your bosses?"

"Sure. But you're taking this wrong. It's not as bad as you . . ."

"I've already said yes. You don't have to explain any more."

"You don't understand," Laura said. "If we don't approach your people from a sympathetic viewpoint, we can't read them. And the more sympathy I show, the better job I do. This could work *for* you."

That was the fifth time she'd tried that line, or a variation of it, and Bentz continued to ignore her. He sat silent at a table at the front of the empty conference room, poking at a keyboard. Once in a while he'd look up puzzledly at the graph-lines undulating across the screen.

She shrugged and decided to try a new approach. The lines on the screen were beginning to squirm crazily; Bentz looked more bewildered than ever. She walked to the table and said, "What are you doing?"

"Trying to find the same answers you came here for," Bentz said sourly.

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"Korngold is convinced we know something they don't. They're wrong. We have no idea why membership has shot up so fast."

"We're only interested in why our employees are joining."

"It's part of a larger phenomenon, though. Answer the larger question and you'll probably answer the smaller. But . . ." he slammed his fist on the power switch, turning the machine off, "*the answer isn't here. Or if it is, I don't* know how to get it."

"Why do you care? I'd think you'd just be happy for the new income. Why look a gift horse in the mouth?"

"It might be toothless. Listen, we found out that a bunch of the people who're offplanet—almost half—have joined the Searchers. That could be good. Maybe the experience of new worlds opens their minds to new religious possibilities, and these folks are serious. But it could be these people are just a new form of jet-setters. If they're faddists, our new income will dry up just as quickly as it came when they find some more exciting game. We don't know that much about our membership, unfortunately—it's against our principles to inquire too deeply."

"You're quick enough to find out whether or not they're espers."

"That's different. That's for their own protection."

"How so?"

"Didn't you read my pamphlet on the subject?"

A touchy question. She hadn't. Laura called her mirrored image back into her mind for reassurance, sorted out years of adolescent practice, and turned on the sex appeal. She sat half on and half off the table, displaying her legs. She smiled her most enticing smile. Most important, she made it all real for both of them by arousing herself mentally. She thought of herself and Bentz naked and private and ready. With Bentz as the subject, it came easy.

"I'd really love to hear you tell me yourself," she said, leaning towards him.

To her surprise, it seemed to work. *She wasn't sure whether to be relieved* or disappointed. Bentz reddened a little, coughed, and said, "Maybe it's hard for an outsider to comprehend that investigation into what we call 'occult phenomena' or 'magick' can really be dangerous. But that's the way it is. You know that a lot of what we do here is magick?"

"Yes . . ."

"Do you think it might be possible to raise this table, using only the power of your mind?"

"What kind of question is that? I've seen it done!"

"Do you think you could possibly read someone else's thoughts?"

"Nine times out of ten. You know that."

"See? You just accept it. But until the ability you take for granted was created by genetic engineering out of a human talent so puny most scientists doubted it existed, it was basically a subject solely for magickal speculation and discipline. There are a few people in this building who have, by slow, careful training, gotten to the point where they *think* they may be able to read minds badly. Maybe."

"I see," Laura said thoughtfully. "If you had people among you who just

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did these things naturally, without any special effort, it would create jealousy and dissension."

"No," Bentz said, shaking his head sadly. "We have this rule for the protection of the espers. For one thing, you have the ability without having the years of discipline that ought to be behind it. You haven't learned what you need to go further and yet, inevitably, you'll try. And for another—the very ease with which you do these things is dangerous. It makes it easier for you to believe in other magickal phenomena which haven't been rigorously proved to exist."

"What difference does that make?"

Bentz scowled, scratched his head furiously for a while, then finally stopped and said, "We may really be on to something here. We've got people who *seem* to do things you espers only dream of. On the other hand, maybe all we've discovered is a very entertaining way to drive ourselves nuts."

"Huh?"

"If we're really going to be *Searchers*, we've got to keep our magickal and mundane lives clearly separate. It hasn't been proven that magick is anything more than a controlled psychosis, and if you don't keep the two areas of your life separate, don't keep a skeptical, scientific attitude towards spiritual phenomena, you could very easily wind up with your psychosis going out of control. It could take over your life."

"And you think espers are highly susceptible to that."

"We had a couple of bad experiences early on. I don't want to see them repeated."

"But you're more than just magicians. You have a whole religious system . . ."

"Hold it right there," Bentz said. "We're trying to get to understand the nature of man's spirit and maybe, by doing that, come closer to God, or to the gods. Given that slant, who can say where magick stops and religion starts? Making that distinction will be useful tonight, because we have to deal with the State and its stupid definitions. Making the distinction in your own mind is just a way to trap yourself."

"But my point is, if what you have to offer is valuable, then aren't you being terribly unfair to the espers?"

"Maybe," Bentz said, smiling. "But our most important religious discovery is open to everyone. I'll tell any esper that comes along the great secret, which is that you, and you alone, are entirely responsible for your own spiritual development."

"In other words, you'll put us off with a homily."

"It's much more than a homily, believe me. But we'll talk more on it later," Bentz promised, pointing to the door. "Here comes Lew with the keg. And Will with the hard stuff."

Laura looked around and saw no one. Isaac, though, was opening a closet in back and wheeling out a big cooler. A colorful poster above the closet door caught her eye: a reproduction of a cartoon by Crumb—an artist, if she remembered correctly, of the previous century. An old guru type with a long white beard spoke through a balloon.

"It don't mean shit," the guru said.

"Hi, Isaac," Lew's voice said from the door.

She turned again and saw Lew, still

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in clownface, rolling in a beer barrel by standing atop it and pedalling. His balance seemed perfect. When she kept her eyes off his feet he seemed to float across the room. Lew was followed by a man in military uniform carrying a case of bourbon. On each epaulet, two stars glinted. As he walked from the shadows into the better light at the front, she recognized him—a skinny, gray, shaggy man with a tiger's face. Major General William Erdman, Army. A key man in the military government. Someone to fear.

"Where do you want the hooch, Isaac?" the general asked.

Bentz answered by pushing the keyboard to one side of the table. Lew put the beer in the cooler and pulled a tray of tumblers from the closet as Will Erdman began to pull the bottles out.

The clanking glass almost seemed to be a signal. A dozen or so more people walked in, some of whom were powers in the organization and some of whom were not. It didn't seem to be a meeting of the hierarchy so much as a meeting of Bentz's buddies. They clustered around the table, pouring themselves drinks and pulling the folding chairs up close.

Bentz fixed her a bourbon and seltzer in a large glass as he explained to everyone who she was—without mentioning ESP.

"That," Bentz concluded, taking a sip of his drink, "is the kind of crazy stuff that happens to you when you become a big organization. As opposed to the crazy stuff we're used to. If we try not to be too hostile, maybe we can learn from this."

There was a murmur of bored agreement, which surprised Laura and reassured her. As she took a seat at the side of the table nearest Bentz, she heard a voice say, "Okay, Isaac, what's the word?"

"We're going to go ahead," Bentz said.

"You mean we're going to file papers as an organized religion?"

"That's right."

"Christ on a crutch!" Lew groaned.

A couple of other voices made unhappy sounds, too. Bentz leaned back in his chair, arms folded, waiting for more.

"It's the beginning of the end," Lew said. "It's hard enough to get people to think for themselves without cursing them with the name of 'Church.' I can see them now, lining up for easy answers . . ."

"That doesn't matter," said the general. "We're only signing a piece of paper with a few words on it. That's all it is: words. Nothing important will change unless we want it to."

"Words are powerful things," said Lew. "We ought to know that better than anyone."

"You're right about that," Bentz acknowledged. "We're taking a risk—one that I hope we can transcend—to avoid a greater risk. Lew, I know I'll never convince you no matter what I say, but I'm going through my reasons again anyway, for the benefit of the other groaners."

He poured himself a fresh drink, thought a while, and said, "Aside from General Erdman, you can all remember what it was like seven months ago. We had a worldwide membership of under 5,000. Hardly anyone had heard of us,

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and when someone *did* take notice, it was usually a district attorney. In this very town, the *Post* had decided we were a bunch of Theosophist fakers squeezing the poor. If things hadn't turned around, we'd have been run out of town, at the very least."

"It would probably have been worse," Erdman said. "We were thinking about mass arrests before I saw the value of what the Searchers are doing."

"And—you'll excuse me, General," Bentz added, "but governments around the world haven't been all that stable lately. The junta could be replaced and we could all wind up in the same mess again. If we're already recognized as a church, though, maybe that would make them think twice."

"I don't get it," Lew said. "You can see that you can't count on government protection, but you conclude that the way to solve that problem is by getting government protection!"

Bentz smiled. "Like you said, Lew — words are powerful things."

Lew cursed softly.

"There's another advantage," Bentz said. "Once we're recognized as a Church, we stop paying taxes. Not only is that good for the obvious reason, but it might turn out to be necessary. We've been growing so fast we can't keep track of our income; we weren't set up for it. We might not have the right answers when tax time comes."

That argument, Laura noted amusedly, made instant converts of Lew's two supporters. Lew grumbled some more while everyone else crowded around the table, pouring out more booze.

"Y'know, Isaac," the general was saying, "I don't think I heard you mention the most important reason for becoming a church."

"What's that?"

"Well—hell, Isaac, we're *not* just Searchers any more. We're finders, too. You've got hold of some important religious truths. Hell, that's why I'm *with* you."

"We've maybe got some theories that seem to be probable," Bentz interrupted. "But that's all."

"Now, now . . ." Erdman rose halfway out of his chair, weaved drunkenly, and flopped back. "We might not agree on all this stuff, but I know we agree on taking responsibility for your own spiritual development. Am I right?"

"Okay. If you want to call that an important religious truth."

"It is. That's why *we* need to become a recognized church. Other churches enslave you, tell you what to do with your soul. There should be a church competing with them that's busy freeing its congregations. And you teach other important truths, too . . ."

"Those are just gimmicks to make people think."

"How about the man-as-information idea!" the general objected. "You believe that one yourself, though you might try to deny it."

"What are you talking about?" Laura asked.

"Lemme explain," Erdman said eagerly. "If you think you're made of matter, you're right, in a sense, but you're taking a very shallow view of the situation. Let's say you eat a steak cut from a radioactive cow. You can trace its course through the body, by monitoring the radioactivity. Eventually the radiation—and the steak—will have dis-

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appeared completely, but *you'll* remain. What *you* are is a DNA program. True, it's a program with the capability of learning, but it's only information, no matter how you cut it."

Laura ran it through her mind a few times and got mildly dizzy. It made a weird kind of sense. "I see what you mean," she said, "but so what? I mean, is the soul included in that?"

"Sure. And now we have to get into Bentz's definition of the soul. Another important contribution . . ."

"Wait a minute," Bentz said. "In the first place, I only believe it half the time. In the second place, it's not my idea. The Searchers are an electric — mmph—*eclectic* group. It's one of our virtues."

"So what *is* your definition of the soul?" Laura asked.

"I'll tell you. Remember, this is all theory, okay?"

"Okay."

"Okay. The reason most people want to have a soul is so they can live forever, right?"

"I guess so."

"Well, it's sure as hell *my* reason. So let's start by defining the soul as whatever it is that goes on after you've been cremated, assume that it exists, and see what we come up with."

"Okay."

"A Sufi named Hujwiri originally gave me the idea. He said that if a Sufi wanted to 'persist in being,' his relationship with all things should stop. Then he could know his 'real self'—the secret of his existence. If we're looking for something immortal, that makes sense because things change, and whatever lasts forever must have some unchanging aspect. That's almost a tautology, I think."

"So what's the good of knowing that?" Laura asked.

"Well, it means we've got a problem. When we say we want to live forever, we usually mean our individual consciousness. That's what *I* mean. But that's different from this unchanging 'real self' Hujwiri spoke of. Individual consciousness can't survive—it's constantly dying and being reborn even when you're alive. What survives is something most people are never even aware of having."

"That's what I meant," said Laura. "What's the good of it?"

"Maybe none. But some Sufis seem to think that by careful training you can unite your individual consciousness with your soul and, in that way, have an actual life after death in the way most people think of it. That's the main purpose behind what most of these bozos do here."

"So you're preaching immortality only for some."

Bentz shrugged. "I'm just looking for the truth. If this theory turns out to be the truth, don't blame me for it—I didn't do it."

Dead soldiers were flung under the table. There was a lot more room atop it now and Bentz, Laura, and Lew were all perched there.

"You know," Lew was saying, "there was a Sufi writer in the last century who analyzed the decline of Sufi groups. It might apply to a group like this, too."

"Christ, Lew," Bentz said, "can't we get on another topic? I'm tired of

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hearing about what a terrible mistake I'm making."

"Let's see . . . there's acceptance of simplifications, sanctification of a hierarchy, messianic thinking, ego-tripping, literal acceptance of the figurative . . ." Lew paused and looked Bentz up and down after that one.

Before he had a chance to go on with his list, Bentz laughed and said, "So what? Every good thing dies and out of death and corruption all good things come. S'God's little joke. One of His jokes. Maybe the only thing I know for sure about God is he's got a weird sense of humor—look at Earth, f'rinstance."

"A nasty sense of humor, I'd call it," Laura said.

Bentz gave Laura a brief hug. "You may have something there."

Lew wiped a hand across his brow nervously. His clown face was already so smeared that it didn't make any difference. "You haven't proved that there's such a thing as blasphemy," he said. "On the other hand, you haven't proved there isn't, either."

"Blasphemy's got nothing to do with it," Bentz said. "I thought you and I agreed that you've got to *appreciate* God's jokes. Given his position and ours, it's the only intelligent thing to do. S'all I'm doing. Appreciating."

His eyes lit up. He beat the table with a full bottle and hollered for attention. After he did this three or four times, he got it.

"Now we're a church!" he yelled.

"Right!" the others said.

"Seems to me we need a new name, if that's the case. A *churchy* name — 'specially if it's true we're no longer Searchers, but Finders."

"The Finders?" General Erdman asked in a quavery voice.

"Nah. That's not churchy. My buddy Lew here was just reminding me of the debt we owe the Sufis. I propose we call ourselves the Reformed Sufi Church."

The idea was a hit. There was a great deal of clapping. There were many cheers, some of them Bronx.

After the noise subsided a little, Erdman said, "You need a title, Isaac."

"Huh?"

"Nobody has a title around here. You're just plain old Isaac Bentz. But surely the head of something as grand as the Reformed Sufi Church can't go around without a title."

"Divine Snoid!" a voice suggested.

"Supreme Allied Commander!" yelled another.

"Say," said Bentz. "That's not bad."

"Celestial Master!" yet another voice yelled.

Bentz smiled an astonished smile. "That one's even better," he said. "I think we've found it. I hereby nominate myself Celestial Master of the Reformed Sufi Church. Will you elect me by acclimation?"

Catcalls.

"Thank you, flock. I accept. Hornbeck?" He pointed at a lawyer, who jumped out of the chair as if someone had jerked his string.

"Yes?"

"Draw up the papers just that way."

Hoodoos from Laura's foster-parents' maid zapped through time and space and sizzled up and down her spine. She found herself tugging at Bentz's arm. Bentz turned to face her.

"I believe," he said with a grin,

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"that you are the most beautiful woman I've ever seen off a screen."

That flustered her only a moment. "Excuse me," she said, "but have the Searchers—I mean, the Reformed Sufi Church—checked out whether there's such a thing as tempting the gods?"

"Pardon?"

"I don't know—maybe it's just childhood ghosts making me nervous—but should you make a joke of it?"

Bentz moved closer, rested a hand on her leg. "Seems to me," he said, "that anyone who's presumptuous enough to found a religion, for whatever reason, is already tempting the gods."

"Damn right," said Lew. "Look what happened to Christ—to give an unusually brutal example."

Bentz frowned. "Okay, Lew," he said. "I'll admit that I don't know what I'm getting into. I tried to get some oracular guidance on this decision, but nothing came. Maybe I really am the butt of one of God's jokes. But I'm not going to worry about it right now."

He hopped off the table, took Laura's hand, and tugged her along behind him toward the door.

"What if I don't want to go with you?" Laura asked.

"Then you'll tell me, and I'll let you go."

The door swung open, he pulled her through, and she said nothing. He led her down the hall and into an office with his name on the door which he locked behind them. Laura found an enormous couch covered in some slick black material and sat, rubbing her naked arms against it. It was wonderfully cool.

She was not. Not just in the usual metaphorical sense, but also really hot. She was sure she was running a fever. Tomorrow she'd be worse. She ought to warn Bentz—if they made love, he risked coming down with something. But that just wasn't the proper, romantic thing to say at that moment. She giggled and started to undress.

She couldn't remember ever having behaved quite this way before. She had drunk less than anyone else at the meeting except for Lew, so she couldn't blame her behavior on booze. It was just that her lust had a mind of its own. It was like what she'd read about being possessed—her arms seemed to move by themselves, unbuttoning, pulling straps.

Not—she reminded herself—that she wasn't very happy with what they were doing.

Bentz was by the couch, staring down at her. It annoyed her to see him still fully dressed. His face was creased with puzzlement, as if this whole situation were a complete surprise to him.

"Know thy enemy," she suggested.

He shook his head and said softly, "It looks like you're not my enemy after all."

"Glad to hear you finally feel that way. Wanna fuck?"

Bentz grinned and unbuckled his belt. "It's not supposed to work this way," he said. "First you're supposed to draw me into a discussion. You tell me what you want most in life and, in exchange for your love, I promise to get it for you."

"You make it sound like this happens to you a lot."

"It happens sometimes. But not quite that way. Usually the women are twice

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your age and not half as beautiful, so they go away unsatisfied."

"You mean if I told you what I want most, you *would* promise to get it for me?"

Bentz's pants dropped. He kicked them aside and started work on his shirt.

"I don't know what I'd do. That's why I'm pleased you're not asking."

His shirt came off. Aside from a stray clump of hair to the right of his navel, he was smooth-skinned. And beautifully muscled.

Laura grabbed his arm and pulled him suddenly, so that he lost his balance and landed hard on top of her. It felt good. She wrapped herself around him tightly and said, "I won't tell you what I want most, but I'll tell you what I want second-most."

"Yes?"

"I want to study under you."

"Do you mean that literally?"

"Don't make jokes. This is serious."

"Shit, Laura. I shouldn't have given you an opening. I've tried to explain that it's dangerous for espers . . ."

"Surely the danger would be minimized by studying under the Celestial Master himself. And—well, there are personal problems I have that I think the Sear— the Reformed Sufis, I mean, could help me resolve."

"You don't want me. You want a shrink."

"I've already had shrinks. The best. Telepaths." She writhed against him.

"Bitch," he said. "I mean—yes. I agree."

Laura got back to her room in the seedy hotel she'd chosen at about 3 A.M. The desk clerk seemed to think Korngold was giving her a skimpy expense account, but he was wrong. She preferred seedy hotels. There was so much more drama in them.

The devil in Laura was feeling very Mata Hari-ish and pleased with itself. She reckoned that it would be 7 AM at Korngold headquarters and decided to report to her boss on her quick work.

The call went through in less than a minute, and the screen lightened, showing Carl Mixter's face, which was glowing even more than usual this morning. He looked very pleased.

"You have something to report?" he asked.

Laura explained that she'd gotten Bentz to agree to train her even though they'd found out she was an esper.

Mixter's face didn't change. "Excellent," he said. "If we'd had to assign a non-esper to this, it would have been tragic. You've done well."

"That's all you've got to say!"

"Yes, unless you've got something else to report. Otherwise, you're wasting money."

She hung up, sat down, and thought. Her progress had been remarkable by anyone's standards. She had expected Mixter to simply refuse to believe her —he'd always claimed she was lazy and inefficient. Instead, he had accepted everything.

He hadn't been surprised at all.

Somehow, he must have known about it already. But how? No one but Laura had been planted in Bentz's organization.

Her sight split again into that same odd double-image. The dizziness returned. She groaned and lay down, still

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dressed, and closed her eyes, which helped.

To distract herself, she thought of Bentz and his church. This was a very satisfying case, she thought, sleepily. Not only had she found love in the most improbable circumstances, but it was possible that she'd also found the key to herself. And all this magickal stuff was intriguing. There were white magicians, she remembered, and black magicians, but the stories always said that white magicians were eventually seduced into the left-hand path, so they would be given over to her power.

Of course, either kind of magician could temporarily gain control over a devil. And she couldn't read their minds, either. Korngold's telepathic magicians were all naturally adept at erecting blocks against being read. Laura had long ago given up trying to read their minds.

Still, it was unusual for them to keep their eyes averted as well. The two shrinks who gave her her final interview both kept staring down at their notebooks, as if they were ashamed.

"We've done the best we can for you," the black one said, "given the, uh—limitations we were working under."

"What he means," the white one said, "is that yours was a very unusual case. The mental bind you'd got yourself into has lasted a long time. It's become habitual—but you know that. All I'm trying to say is that there's only so much you can do to alter a long-standing mental habit—even with the advantage of telepathy. You're going to have to keep working on it yourself."

"That's not what I meant," the black one said. "What I meant was that we're under an ethical obligation, it seems to me, to give her some kind of warning, or preparation for . . ."

"Oh, yes," said the white one. "Preparation for the kinds of problems she'll encounter out of our care." His face grew even whiter. "Well, Laura, I guess we *can* tell you that you'll be subject to dizzy spells."

"Dizzy spells?"

"A side effect of the treatment, I'm afraid. But they're not serious. Just relax and they'll go away."

"The important thing to remember," the black one said, "is not to lose your temper. There will be a tendency for you to turn into a toad."

"A what?"

"A toad. When angered, demons lose control over their appearance and tend to revert to forms more suitable to their spiritual state."

"And, of course," the white one said, "people *will* try to cut into your head. For the jewel . . ."

For several days, Laura forgot to mention the dream. She was distracted by the effort of training in the basic exercises in concentration and self-control (Asana, Pranayama, and Dharana) which are supposed to take months, at least, to master, but which she got down in a few days. When Bentz asked her how she was able to do this, she remembered the training she'd given herself twenty years ago when she was trying to suppress her ego and that, in turn, reminded her of the dream. She told him.

The stories of her dream and her foster-mother's maid both seemed to bother Bentz. He lay on the bottom bench of

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the bleachers in the Reformed Sufis' gymnasium (a suitably sterile atmosphere for the exercises) staring at the scoreboard for several minutes, lost in thought. Finally he said, "I'm not big on dream interpretation, but there's such a clear-cut difference in the fantastic and mundane parts of your dream that I believe the mundane parts may be real memories. You mostly get these dizzy spells when you try to think about the time when you were being shrunk, right?"

"Right," Laura said. She pulled herself easily out of lotus position and sat beside his head, playing with the kinks in his hair. While Bentz thought some more, she watched Lew Grady, the gym's only other occupant, doing exercises which she was unsure whether to classify as calisthenics or dance. Whatever they were, they seemed to be bringing him closer.

Bentz finally said, "Seems to me the most likely explanation is that your shrinks fixed it so you'd get dizzy spells to stop you from thinking too much about what they did. Notice how ashamed they were? I think they did something special to you, maybe programmed you for something in connection with me or the church."

"Like what?" Sure enough, the dizziness was returning.

"I don't know. I can think of all kinds of things. Maybe a hypnotic suggestion to be triggered at some later date. Maybe you're supposed to kill me or something."

Laura shivered and clutched at her spinning stomach. This was definitely the worst attack ever. The seriousness of it convinced her Bentz was on the right track.

"Ugh!" she groaned. "I don't like the idea of having my mind messed with that way."

"Maybe my training can help you find out . . ."

Lew Grady confessed to eavesdropping by stopping his dance and walking over, saying, "Is it worth it, Isaac? You're training just this one person three hours a day. You're feeding her too much new material all at once, and you're neglecting more important work."

Bentz smiled crookedly. "I must confess," he said, "that not all that time has been spent in training."

Laura's attack subsided as her mind was drawn away from her past. She looked at Lew. It was the first time she'd seen him without clown makeup, but his face was just as unreadable. She tried reading his mind, but what came from his mouth and mind were basically the same. *My ability is useless here*, she thought. *Bentz was right about Korngold.*

"I was afraid of that," Lew said, nodding. "Dipping your wick in her, too. It's bad enough that . . ."

Laura expected Isaac to burst into anger at Lew's effrontery, and was disappointed. He waved Lew's flood of words to a halt, turned to her, and said, "I'm afraid Lew is right about that, Laura. It's not really the sort of thing your spiritual advisor should be doing. I was going to call a halt to it tonight, but as long as we're on the subject . . ."

His voice tailed away. Laura was too shocked to say anything for a while, then finally she said, stupidly, "But I love you."

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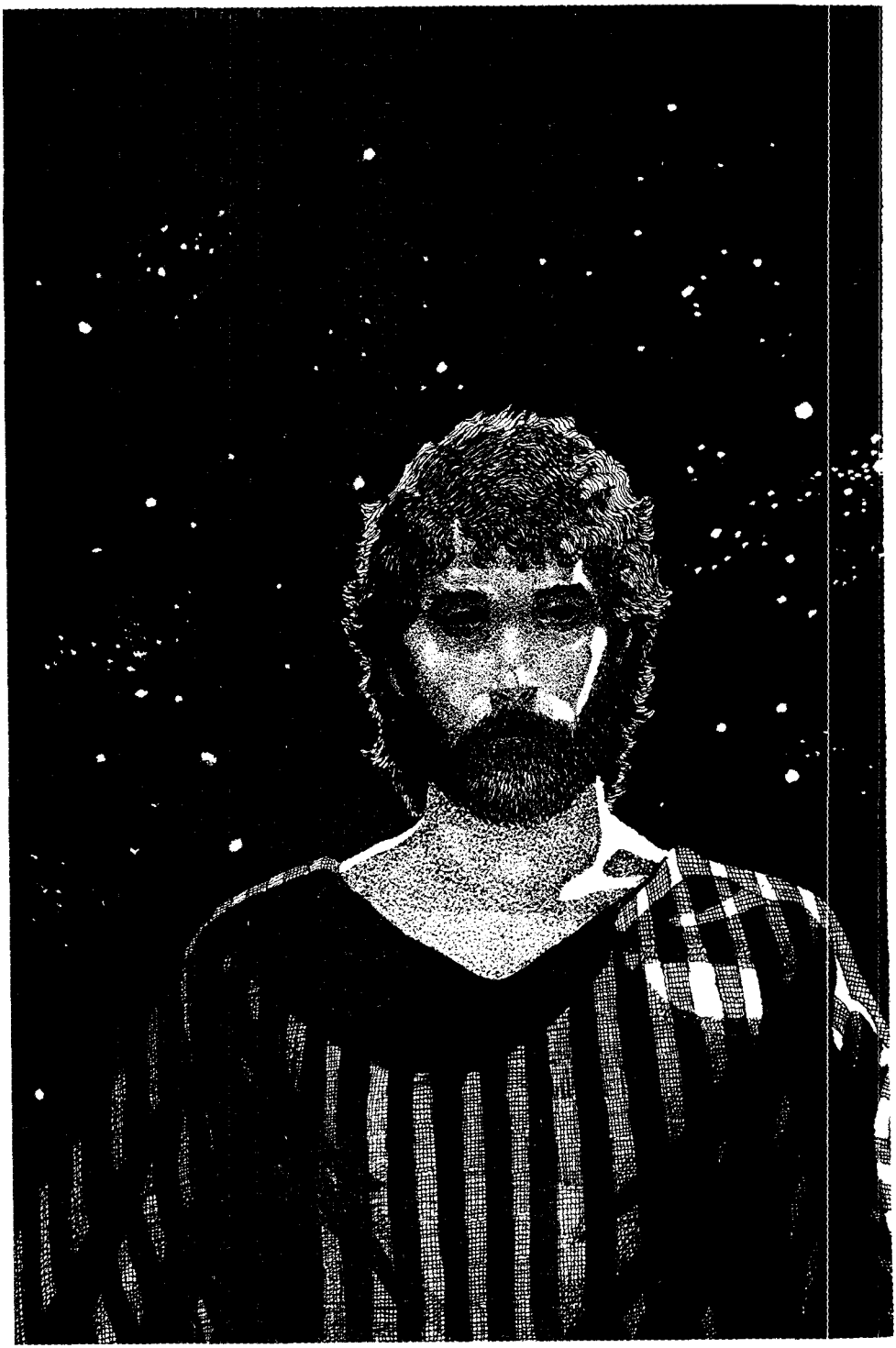

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"I know," Bentz said. "I think I feel the same way about you. Maybe I could find someone else to train you."

"No," Laura said. "It's got to be you."

"Isaac," Lew said, "I don't understand what's happening to you. You've had female admirers before and never got involved with them."

"You heard her," Bentz said, grinning happily. "She loves me."

"Others have claimed to love you, too."

"So you doubt me?" Laura asked.

Lew sighed. "No," he said. "Actually, I don't. You show all the signs. But I don't understand how Isaac can return your love, considering where you come from and what you're doing."

"I'm not sure I understand it myself," Bentz said, thoughtfully. "Laura's fantastically beautiful. That could be a big part of it. I'm not immune to the lure of physical beauty, you know. Look, why don't *you* train her. You're as good at this stuff as me—maybe better."

"Oh no! Not me! I'm not taking on the responsibility of training an esper. Anyway, I'm not going to be around much longer."

"What!" Bentz gasped.

"Please," said Lew, "don't make a big deal out of it. Mr. Mood is establishing an office on Alpha Centauri IV—it's been in the works a long time and they want me to go. And with the Searchers going the way they're going . . . Well, there isn't much here for me any more. You court disaster with this Celestial Master business. I don't want to be around to see the gods pee on you."

"I see." Bentz's face hardened. His voice went up a few tones, turned inanely chatty. "I didn't realize Mr. Mood was doing so well they could afford a spaceship."

"They can't. I'm going by transmat."

"I thought that was experimental."

"Not any more," said Laura. "In fact, they've had a station open on Alpha Centauri IV for over a year now. And the prices have fallen so far that a lot of companies that could never afford to get into space before are doing it now. Last I heard, Transmat, Inc. prices were down to $8.40 per gram. So it's a third the cost of travel by spaceship and it's instantaneous, besides."

"How do you know so much about it?" Lew asked.

She shrugged and said, "Korngold. The PK link is the basic element of the transmat machine. That's what makes instantaneous travel to anywhere possible. All ESP effects are instantaneous because they use only information—even the psychokinetics—and information isn't subject to relativistic limits on speed of travel. Hell, half of Korngold's money comes from Transmat royalties."

"Seems like we run into Korngold wherever we turn," Bentz said.

Laura's heart skipped a beat.

"I'm going to quit Korngold," she said.

She was astonished at what had come out of her mouth. Yet as she said it, she knew it was right.

Lew looked astonished, too—the first time she'd caught him putting his feelings on his face.

"I'll be damned," Lew said to Bentz.

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"Maybe she really *is* worth the risk, Isaac."

"It's a noble gesture," Bentz agreed, "but a foolish one."

Lew backed away, grinning and waving. "I'd always intended to wish you good luck before I left," he said. "Now I think maybe you have some hope for it."

He left.

"I'm going to miss him," Bentz said.

They were quiet for a while, then Laura said, "What do you mean, it's a foolish gesture?"

"Huh? Oh—I meant that if you quit, they'll just send someone else."

"I know that. But your position won't be any worse, and mine will be a whole lot better. This just doesn't feel right, Isaac. You're not supposed to spy on the man you love."

"The next person they send might not be sympathetic."

"Whoever they send will be a TP. You *have* to be sympathetic to read minds well, and the more sympathetic, the better. I've told you that. And another thing—remember what those shrinks treated me for? Well, this job is essentially devilish. I'm supposed to avoid such things."

"That's according to your shrinks. But you're supposed to be making up your own mind about how to treat your soul. Maybe, instead of avoiding such things, you should be going out of your way to face them. Or maybe not. The point is, you should be designing your own soul, and not listening to the advice of others."

"Oh!" Laura said. "Then what, may I ask, are *you* doing?"

"I'm just giving you the tools," Bentz said. "And praying you don't misuse them."

They trained daily in the gym, and at almost every session she pleaded for a return to physical lovemaking.

"Sex is a powerful magickal force," Bentz would say. "The fields merge—the same fields you'll organize into your astral body when you master the technique. We've got enough problems to think about without that."

Then Bentz would work her through the techniques of invokation. Laura would try to give herself over to possession by a god or goddess and she'd put the subject of sex aside till the next day.

"You talk of these gods as if they were real!" she'd object.

"To work with them, you have to believe in them."

"But some gods don't allow you to believe in certain others. I mean—you can't just turn belief off and on!"

"Sure you can. I'll teach you to lie to yourself so convincingly that you achieve absolute faith," Bentz would say. "Then you'll learn to snap out of it, laugh at it, take notes, and go on to a new faith. This is necessary to *all* magickal practice, not just invokation. It's an old Crowlean technique, and the secret to mastering it is good, old-fashioned, sweaty practice."

"And then," Laura suggested one day, "when I need to believe in something, I'll be able."

That comment seemed to jolt Bentz. He looked her over carefully. "For the purposes of your work," he said, "yes. But use this frivolously and it'll blow up in your face. In fact, it might blow

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up even if you don't use it frivolously. *This* technique is the reason magick has always been dangerous, even for non-espers. For all practical purposes, what you believe, *is*. Or, as Jesus said, 'All things are possible to him who believes.' Or as Jiminy Cricket said, 'When you wish upon a star . . .' "

Laura found herself giggling. "Isaac," she said, "you're the world's most religious skeptic."

"Hmm," Bentz said. "I don't know about that."

Not long after, she mastered the technique, and in turn they believed in and dismissed Isis, Bacchus, Tetragrammaton, Apollo, Heimdall, and Lucifer. ("It's silly to be nervous, Laura, He's just another deity, and a third-hand one, at that.")

Lucifer gave her problems. He was, for her, frighteningly easy to call up, and frightfully difficult to dismiss.

About the same time, shortly after Lew left, Bentz became obsessed with his Mission to the Stars. He drew up long lists of who was to go, altering them nightly. He re-reviewed his demographics (Alpha Centauri IV: Searchers: 43%; Atheist/Agnostic/ Uncommitted: 22%; Christian: 21%; Moslem: 6%; Buddhist: 1%; Other: 7% [Err. ± 8%]) and decided not only to move the date of the Mission up by two months, but to start planning for an eventual move of all headquarters off Earth.

Laura made sure that Korngold knew about these last two ideas before he'd even announced them to his buddies at HQ, then made sure Bentz knew Korngold knew, and reiterated her notion that maybe she should quit her job.

She had more luck on this issue than she'd had on the question of sex. Bentz gave in almost immediately because, he said, she was becoming obsessed with the idea and he didn't think it was important enough to fight about.

To Laura's surprise, Carl Mixter didn't seem to think it was very important either. When she screened him and told him the news he smiled, shrugged, said "Okay," and switched off.

That puzzled her. Unfortunately, she was pretty busy around that time and didn't think about it as much as she should have.

Laura squirmed, trying to get comfortable as she sat on the hard bleacher seat, listening to Bentz speak in his lecturing voice—the dry monotone of a put-on that he used mostly for serious talk, but that he also used to actually put people on with sometimes, just to keep everyone off balance.

"Learning to form and control your 'astral body' or 'body of light' is essential for monitoring your own progress toward finding your true self. You'll see new things in this body, and what you 'see' in the astral plane doesn't usually look like what you 'see' normally. The information is conveyed through different symbols."

"You're losing me, Isaac."

"When you read a man's mind," asked Bentz, "can you tell if he's physically ill?"

"If he happens to be thinking about it. Otherwise, no."

"When you see through the eyes of your astral body you can, regardless. You'll look at *his* astral body and it'll seem odd—distorted, or maybe dingy. That's an easy trick. It may take you

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years to figure out what some of your other astral symbols mean.''

''You're starting to sound like you really believe it, Isaac.''

''I try not to believe anything, but I have noticed a lot of people around here can tell instantly if you're sick, by some means or other. Even if it's just a little ache.''

Laura smiled. ''I've always said that everybody has at least a touch of ESP. That seems to support my theory.''

''Let's not argue over labels,'' said Bentz.

''Well, it's either that, or it really is Magick.''

''Why don't you experiment before you classify?''

So she did. She learned right away to form her astral body and walk it around the hall outside the gym. As part of the exercise, she described what she saw on her return. If Bentz expected her to object that she was only describing what she remembered anyway, he was disappointed. He certainly sounded disappointed.

She progressed rapidly over the next few days, and the more successful she was, the more disappointed Bentz became. She left her body and went on an hour's flight around the world. She returned and reported symbols she'd ''seen'' and what she thought they meant. When her interpretations matched perfectly the correspondences the Searchers had established over twenty years of painful experimentation, Bentz congratulated her in a voice that was almost a sob.

Laura figured he resented the fact that she could walk in and outdo people who'd been working at it for years. Love isn't a cure for pettiness, after all.

Laura found the real reason when, practicing on her own one night, she decided to leave her body and find Bentz.

Laura loved out-of-body flight. It gave her an opportunity to travel for free, although she couldn't always figure out where she was. It put her in a world that was wonderfully different. She could hear colors and smell sounds, and every sight was a Symbol. Trees and rocks lived and talked. Ghosts walked.

When she first left her body there was a feeling of wholeness, of completion. As the information of which she consisted became disentangled from its mundane coding she felt, somehow, more real. This was her real home, that for which she was bred—a world of thought. And the farther away from her body she got, the realer she felt.

Hovering above her roof, listening to the singing voices she knew were stars, she tried to assess herself. She wished there were a body within her astral body that was finer still, so she could rise again above *it* and study its health.

Then again, she thought, *why worry about degrees. The important thing is that you are getting better.*

It was astral flight alone, in and of itself, that seemed to be doing the trick. Every time she indulged in it she was able to remember more of her psychotherapy. It was spotty, so far, but definite. ''*We're going to have to play a sort of nasty trick on you,*'' the white shrink was saying. ''*We hope you'll forgive us when this is all over, but we're setting up an aversion in you to thinking*

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about our treatment. You understand, of course, why that's necessary.''

She felt a sudden urge to go to Isaac, to . . . to tell him of her progress. Well, telling him would have to wait until tomorrow, but there was no reason why she couldn't go to him. She directed her will in his direction.

Almost instantly she found herself soaring to the stars—more specifically, to the dull alto that was Procyon.

Whole worlds of Reformed Sufis, she found herself thinking excitedly. *Surely, if we're doing that, we* must *be increasing the number of sincere Searchers, too. We've got to transmat out there soon, Laura and I. That's where we really belong.*

There was a surge of love for herself so warm and intense that if she'd been reading minds in the usual way, she'd have fainted from it. Another advantage to being bodiless.

There were a few seconds of complete confusion while she realized that those thoughts of love were not hers, but Bentz's, and Bentz realized that the thoughts about being bodiless were coming, somehow, from Laura.

Laura! How did you get here?

Information passed between them quickly. In milliseconds Laura knew that Bentz, too, was indulging in astral travel before sleep. The story of Laura's night passed just as quickly. The exchange expanded to their pasts, their hopes, their essences—after all, they *were* information. Before they were quite aware of what was happening it was out of control and they were joined together in something very like an embrace.

And experienced something very like sex, only much more intense. So intense that Laura questioned, in the little corner of her mind still able to think, whether or not it was better. Then that little corner began to disappear, as they became One. Laura screamed.

It was a real scream. She was in her body. She opened her eyes, got up from her bed, and fumbled for the light switch, groaning, badly shaken. For the first time in weeks, she decided to use her moodbag. She found it shoved under the bed and set the dial for downers.

She awoke, after a sound sleep, full of Theories. The first thing she did when she saw Bentz the following morning was to spring one on him.

''You did experience what I did last night, didn't you?'' she asked.

Bentz was standing on the free-throw line, dribbling a basketball listlessly. His eyes were red and sleepy.

''Yeah,'' he said.

''Well, then,'' she said, ''you can't go on saying that when we have an out-of-body experience we might only be fooling ourselves. Astral travel is for real.''

''Maybe not,'' Bentz said.

''How can you say that!''

He took a shot, missed, and wandered over the the wall to retrieve the ball, calling back, ''You're a telepath, remember? And now you're a telepath who's becoming expert at believing in things. You believe that the power of your mind is increasing. When your belief in yourself increases, your performance improves. Everybody knows that. Who's to say you weren't just doing a hell of a job reading my mind?''

''But you've got a natural block!''

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Bentz carried the ball back to her, shrugging. "Okay," he said. "But who knows what a natural block is? Nobody knows why certain people are immune to being read. Maybe the problem is in the approach of the telepath. Maybe you've stumbled on the right approach. Come to think of it, you've *definitely* stumbled on the right approach. We're just arguing about what words to label it with."

Laura nodded. That had been another of her Theories.

"My guess," Bentz continued, "is that the prevailing reality—the word most of the world will attach to what you've done—will be 'telepathy' and not 'magick.' Sooner or later Korngold is bound to discover this, and how do you think they'll present it in their company schools?"

"So what? It's still astral travel."

"To you, it probably will be. I hope those guinea pigs at the Korngold schools don't get sucked into the same kind of horror we got sucked into last night, or they'll be calling it possession."

"I'm not sure how I feel about last night," Laura said. "In a way, it was beautiful. I know it seemed scary at the time, but after thinking it over—don't you at least think it was a valuable experience?"

"How so?" Bentz asked grumpily.

"Well—at least I'll never have any reason to doubt your love for me . . ."

"Our love is probably the reason we were drawn into that mess. Anyway, did you ever doubt our love?"

"No."

"Listen, Laura—you've got to stop these exercises. I was up all night thinking about it, and now I'm sure that what I've warned you about is happening. You're gaining abilities that you're not spiritually prepared to handle. I got to know you better than ever last night, and a number of problems were brought home to me very forcibly. For one thing, it's clear you're far from well . . ."

"But I'm getting better. The exercises are *making* me better."

"You're recovering that little piece of your memory we were worried about—I'll agree you're improving in that respect. But there's still a large part of you that thinks it belongs to Lucifer. That hasn't improved at all. Your natural telepathic ability has enabled you to do something that's unprecedented in the history of astral flight, but now I doubt that you have the mental strength to handle even ordinary out-of-body experiences. If I hadn't overcome my own lust and forced us apart, your personality might have been permanently warped by my own."

That sounded so much like an easy boast that Laura was tempted to test Theory #2. She stepped out of her body—it had become easy with practice—and put herself in contact with Bentz's field.

The Theory checked out. Whatever it was that made a natural block, it was no hindrance to this kind of mind-reading. And Bentz was sincere.

She pulled back into her body and Bentz said, "I felt that. You did it again. I've been trying to tell you how dangerous that can be—aren't you listening?"

"But you'll protect me," she said.

"You're advancing too fast. I don't know if I *can* protect you."

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"Are you sure you're not just upset that telepaths can get around a natural block—afraid I'll find some more new things we can do?"

"That's not important."

"Aren't you glad I'm not reporting to Mixter any more?"

"I'm serious, Laura. We're talking about your survival, whether you know it or not. Any little psychological problems you might have can be magnified all out of proportion by this stuff, if you haven't had the proper spiritual preparation."

Laura sobered. "I'm sorry," she said. "I know you're really concerned. But you can't expect me just to quit cold. Besides, I want to keep seeing you."

"We don't need an excuse to see each other."

"I need to remember what happened to me, Isaac."

"You don't need to remember right this minute, do you?"

"I don't know."

All day she told herself that she ought to at least give Bentz's suggestion a chance. For that one night, she could go right to sleep, forget about spiritual matters. It would be a gesture of love that could, perhaps, be extended, one day at a time.

When she got back to her room her demon inner voice explained to her just how silly that was. Sure, she loved Bentz, but she was also visiting him for spiritual benefit. No training, no benefit. Her savings wouldn't last forever. Soon she'd have to find work, and then she might have no time for training. If she kept at it now, Bentz would have to keep at it with her. After all, he loved her.

She was on the bed and out of her body before she knew what hit her.

Illogically, she stayed in her room for fear that Bentz was keeping an eye out for her. She hovered above her body, watching her chest slowly swell and contract. Maybe, she thought, staying in her room would help her. There would be fewer distractions.

It felt so natural! Only an esper could feel this way about Magick—she was convinced of that. To the sheep in the Reformed Sufi Church, this stuff was eerie. Even Bentz always seemed slightly astonished when one of his ceremonies did what it was designed for. He swore by his skepticism the way Sunday drivers swore by their seatbelts, and was always careful to insist that all of it might be unreal. She *knew* this was real.

Might it only be real for espers?

She set that thought aside and returned to the task of regaining her memory of six months ago. But she kept returning to the thought of Bentz. Specifically, to a photograph of Bentz.

Where had she seen that photograph?

As far as she knew, she'd never seen any photos of him. Was her memory getting worse, for a change?

She turned her attention away from the body on the bed below to the blank white ceiling, to help her concentration, and again thought back to the blank in her life. Before her shrinks gave her that apology for creating her mental block, she was doing . . . what?

She was looking at a photograph of Bentz!

She was in her shrinks' office. Carl

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Mixter was there, too. The photo was being projected onto the wall.

"Before you accept this assignment," Mixter was saying, "I need your assurance that you'll give yourself over to our psychiatric department without any reservations."

Laura heard herself say, "For the kind of promotion you've promised me? You've got to be kidding. Of course I will."

Mixter nodded. "Okay," he said. "This is the man you're going to fall in love with. His name is Isaac Bentz."

"Pardon—did you say, 'fall in love'?"

"That's right. We're betting that he'll respond to that by returning your love. And we'll learn a lot more than we would otherwise."

"What makes you think he'll go for me?"

"From what we know, he seems to be attracted to the dark-haired, svelte type. He's addicted to Paula Urban movies, and you look a lot like her — except, to be frank, you look better . . ."

Her mind recoiled from that memory, went ahead in time. But she was still looking at the photograph. This time the white shrink was talking to her while the black shrink wandered through her mind, planting a suggestion here, suppressing a reaction there. Her body was full of an expensive hypnotic drug from Epsilon Eridani II.

"Remember how you used to feel about Heinrich Winckel when you were in school?" he asked.

"Yes."

"You feel that way now, don't you."

"Yes."

"But what you feel when you look at this man is even stronger, isn't it?"

"Yes."

She found herself back in her body, nauseated. She ran to the john, flopped over the sink, and heaved violently. Nothing came up. She looked in the mirror above the sink, but this time it did nothing to calm her.

Jesus, she thought at her image, *your love for Isaac was programmed in advance! Your love was just a tool for Korngold Industries, part of its ESPionage. And you agreed to do this to yourself, you devil!*

Her nausea faded and she started to giggle uncontrollably as she realized that she'd quit Korngold for love of Bentz and now she'd never get her promotion. She stopped her giggles by shocking herself with cold water. She dried herself and looked in the mirror again and this time it did seem to calm her a little.

She sat on the edge of the tub and thought.

Well, with the return of her memory, with the strengthening of her astral body, she was whole once again — unpolluted by Korngold's false love.

Wasn't she?

She checked it out by forcing herself to picture Bentz clearly.

She felt nothing.

Feeling nothing was a terrible feeling.

Hell, what was so "false" about that love, anyway? It sure felt like the real thing. It had made her feel more alive than she'd felt in years. And Bentz was a wonderful person. She'd never fall in love with anyone that decent on her own . . .

She laughed, left the bathroom, and got back in bed. She discorporated. She forced herself to recall the whole subtle,

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intricate course of her treatment. Then slowly, carefully—leaving out only the memory block—she took the Korngold shrinks' unwitting gift and wove it back into her soul.

Getting it back took a lot more time than losing it, so she got very little sleep that night. She awoke groggy and was still a bit stupid when she got to the building on Eye Street. She was trying to decide whether it would be wise to tell Isaac about what she'd discovered, and on the jog up the front steps reckoned maybe she'd better not—at least not until she could think about it with a clearer head.

Bentz wasn't waiting for her in the gym, as he usually did. Confused, she wandered out and down the hall to Bentz's office to see if his secretary knew where he was. His secretary wasn't there, but Bentz was, along with a guest.

The guest was Carl Mixter.

"Hi, Laura," Mixter said. "Surprised to see me?"

"That's putting it mildly," she said.

"You're welcome to join us if you like," Mixter said. "I'm not mad at you."

"Please do," Bentz said. "I think you should hear this."

Watching Mixter warily all the while, she took a seat, keeping her back away from him and pulling it under her without looking at it. Fear washed the gumminess from her brain.

She'd never seen Mixter looking this way before. He seemed peppy and happy and full of purpose without seeming especially malicious. Tentatively, she probed his mind and, finding no jammer in the area, did a brief scan. There was no malice. There was sorrow for old sins and a new-found, self-conscious spirituality, and *We've got to make it up to Laura, somehow.*

She pulled out, wondering what the hell Korngold did to him, and looked questioningly at Isaac.

"Korngold Industries," Isaac said, "has finished evaluating us, and their judgment is favorable—more favorable than I'd have imagined possible. Not only do they want to sponsor a Reformed Sufi mission within their own organization, but they want to make a no-strings contribution. An enormous one . . ."

"At heart," Mixter said, positively beaming at Laura, "I consider myself to be a Reformed Sufi."

"Korngold doesn't give anything without strings," Laura said, looking at Isaac. "And sometimes you don't know what the strings are until you're already committed."

"That's not true," Mixter said, grinning. "Korngold will give money without strings to anybody who's going to do exactly what Korngold wants done anyway—provided Korngold thinks the money will help them do more of it."

"And just what is it the Reformed Sufis are going to do that Korngold wants done?"

"Why—they're going to spread Reformed Sufism, of course. I only wish we'd been sure of you earlier, Isaac. There was a communications problem between employees and management which led to a terrible misunderstanding. Fortunately, Miss DeWitt's reports to us finally cleared it up. And, inci-

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dently, Laura, you're still on the payroll. Your resignation is not accepted."

Something in what Mixter had just said bothered Laura, but she couldn't put her finger on it, and she had another question begging to be asked.

"Why?" she asked. "Why should Korngold want to see the spread of Reformed Sufism?"

"I was just getting to that when you came in, Laura. You've never had the opportunity to use the Transmat; and if I remember rightly, you never worked on any of our cooperative projects with Transmat, Inc., either. Is that right?"

"True. You know damn well I was on the ESPionage path. What's that got to do with it?"

"Well, the money isn't just coming from us. Transmat, Inc., wants to contribute too."

Bentz cleared his throat in a way that sounded a lot like a growl. "Mr. Mixter," he said, "you seem to be doing an awful lot of beating around the bush. Would you mind explaining just what it is about us that you think is so important?"

Mixter's face fell. "I'm sorry, sir," he said. "I really thought I was making myself clear. What's important about Reformed Sufism is the idea at its very root—that man is no more than information."

"And why," Bentz asked, "should you and Transmat, Inc., want to see that idea spread around?"

"Really," said Mixter, "I think you're coming at the question from the wrong direction. Our motives aren't primarily commercial, believe me. We really want to see a wider acceptance of what, to us, seems a great religious truth. A few years ago that idea seemed very mysterious and obscure, but now technology has caught up with it. Every day the Transmat proves to us, dramatically, the plain truth—men are no more than the information of which they consist."

"Huh?"

"You've never used the Transmat, either," Mixter said, sadly.

"I've never even flown in an airplane."

"Don't you know how the Transmat works?"

"It transmits matter from one point to another instantaneously, right?"

Mixter blushed. "Ah . . . actually, no. The name 'Transmat' is, I'm afraid, slightly misleading. Even euphemistic. Relativity theory shows you *can't* move matter faster than the speed of light. But of course you *can* use ESP technology to move information instantly—massless, you know. So, uh, what the Transmat does, is it scans your body to find the most probable state of its subatomic particles. And, of course, you can't find out where every subatomic particle is in a body without disintegrating it in the process, so . . ."

"What!" Dimly, Laura heard Bentz scream that word as she herself screamed it.

"Please, sir," Mixter said. "The Transmat is absolutely necessary to our economic survival—maybe to our survival as a species. Humanity has just about exhausted this planet. We've got to maintain our links with the four settled worlds, and spaceships are just too expensive. Anyway, as Reformed Sufism shows, a man is information, so when the structure of the body is received as information at the destination

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and is reconstructed out of new matter, the *person* is the same. No harm's been done at all."

Bentz' face was ashen. Laura thought she could detect a slight tremor in his hands.

"My God, man," he said, "you people are *murdering* everybody who steps into one of your machines. Just because you can create a duplicate doesn't mean . . ."

"You see!" Mixter said triumphantly. "Everybody who uses the Transmat has that same fear. Even *you*, of all people, react that way. It just goes to show how universal it is. Of course, you've shown why that fear is totally baseless."

Bentz was quiet for a while, then said, "You've used the Transmat yourself, I take it."

"Sure," said Mixter.

"That's the common denominator."

"Huh?"

"I was trying to figure out what, if anything, all those new converts had in common. Now I see. Most of them are off-planet and the rest—I imagine they all either use the transmat, or figure they're going to. I'm sure that's why General Erdman suddenly found comfort in my message, whether he knew it or not . . ."

Bentz's face turned even paler. "Oh, shit!" he groaned.

"What now?" Mixter asked.

Laura got up, walked around the desk, and put a protective arm around Isaac, glaring at Mixter the while. Isaac looked terrible. His trembling was much more obvious now.

"Maybe you ought to lie down for a while," she said.

"My Mission to the Stars," Bentz said. "I've already sent an advance man to each of the four worlds—by transmat. Hell, I was going to move my whole headquarters out there. I think I'm going to be sick."

Laura pulled Isaac out of his chair and led him to the sleek black couch where they'd first made love. She got him on his back and sat perched on the edge, looking down at him.

"Do you feel any better?"

"A little."

"He's right, darling. I hate to admit Carl Mixter's right about anything, but you really are worrying yourself over nothing. I *know* that man is simply information—it's not just a theory. I think espers have an advantage over you other folks. I *know* we can see more clearly what is and isn't purely psychological; and when I'm out of my body, I really am. What happened to us the night before last was real and it proves the theory."

Bentz was taking this 'way too hard, Laura thought. He was being absurd — childish. Yet—to be honest with herself, she had to admit that she enjoyed seeing him this way.

Was that just because it gave her the opportunity to mother him, she wondered, or were there other, darker reasons? She twitched back an insane urge to pinch him as Mixter said, "You know, sir, we got a very clear picture during Laura's last transmission to us of her, um, *communion* with you. I feel silly trying to convince you of your own doctrine—but if man isn't essentially information, then how do you explain what happened?"

"I don't know," Bentz said. "There's

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a possibility that astral flight may be just another way the mind can fool itself. And Laura's telepathic ability might explain the special effects."

"Do you really believe that?"

"I'm not sure," Bentz croaked. "I'm going to have to meditate on this." He cackled and added, "Don't worry—I'll still be happy to take your money."

"*That's* what was bothering me, Mixter!" Laura said.

"Pardon?"

"Something you said earlier bothered me, and you just reminded me of what it was. I haven't made any reports to you since I quit. So how the hell could you know about what we did two days ago?"

To her amazement, Mixter blushed again. "I'm afraid we played a little trick on you," he said. "That moodbag we gave you—if you tore it apart you'd find a PK link inside. Every time you used it we read you in Lübeck. You see, we always knew there was a high probability you'd quit, given that you were going to fall in love with Bentz. This way, your quitting wouldn't make any difference."

Bentz jerked himself into a sitting position.

"What was that?" he asked. "About knowing that Laura would fall in love with me?"

Oh no! Laura thought. *Is there any way out of this?*

She read Mixter again. He had every intention of telling Bentz all about it. His newfound honesty and straightforwardness were shiny toys to him, which he concentrated on to the exclusion of all else. He saw no harm in Bentz knowing and was blissfully unaware of the hurt he'd inflicted on Bentz already. He was too sure of the truth of his position to understand anything.

Religion sucks, Laura thought. *I'll have to tell him myself, before Mixter does.*

She told him.

When she'd finished, Bentz rose from the couch, turning his back on both of them.

"Get out," he sobbed.

Laura wandered through headquarters for about an hour, hating every smiling face she saw. When she could stand it no longer, she went back. Bentz was sitting at his desk, his head buried in his arms.

"Dearest?" she called.

Bentz pulled his head up and stared at her with bright red eyes.

"Are you feeling any better?" she asked.

"Sure," he said. "When you think about it, you can see that this whole thing has its humorous side. My church —my life's work—turns into a cartoon which mocks me. My greatest contribution to humanity turns out to be the Muzak they play to calm the cows on their way to the shambles. The love of my life turns out to have been manufactured by the men who run the shambles . . ."

"Okay," she said. "You've had two shocks, one right after the other, and I can understand why you're having trouble thinking clearly, but if you'd try to calm yourself . . ."

"I'm calm. I'm trying to explain to you that you were right, that night I named my church and myself. It's obvious that I really did tempt the gods,

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and that now they're having their own little joke on me in return. I should change my title from Celestial Master to Cosmic Clown."

"For God's sake, Isaac, you really are *some* kind of clown. You want your church to be a success, and now it is a success. You want me to love you, and I am in love with you. What's so damned terrible?"

"Your love is an artificially created feeling. It's just not the same."

"The same as what? Is love such a common item that you can afford to reject it if it doesn't come about in precisely the way you want?"

"What about what *you* want, Laura?"

Laura felt tears slithering sideways across her million-dollar cheekbones. "I told you, dummy," she said. "I lost that feeling and purposely built it back up again. Who was it who told me I should make my own soul the way I want it to be?"

"That's not quite the way I meant it."

"However you meant it, that's what I did. I made it so that when I look at you, my body produces all kinds of crazy chemicals. I made it so that when I think of you, I think automatically of ways to get you what you want. *I* made it that way, this time, not Korngold. When you think about it, that's quite a tribute."

You did it for yourself, not Bentz, she scolded herself privately. *Why do you always twist the truth?*

"That sounds good," Bentz said. "I'm going to have to give this some hard thought."

The next day, Bentz was unavailable to Laura. When she asked around, she found out that he was available to just about everyone *except* Laura, Mixter included.

The day after that, she found out just what Bentz had meant when he said he was going to do some hard thinking.

She read about it in the *Post* before she made her daily walk to Eye Street. Bentz had announced that he was going to shut himself up in a retreat—thirty acres of woodsy hills in Kentucky, near his birthplace. There, accompanied only by a few close friends, he would meditate "for an indefinite period." The newspaper included a list of the "friends." Again, Mixter was included. She wasn't.

She practically ran to Eye Street, and this day she didn't let good manners get in her way. She didn't ask around to find out how Isaac was feeling. She pushed her way past his secretary and into his office, still carrying the *Post*, which she threw at him.

"Isn't there a name missing from that list?" she hissed.

Bentz got up from behind the desk, back straight. He didn't look happy, by any means, but he seemed to have his sense of purpose back. He walked to Laura, took her hands in his, and squeezed them until they ached.

"I don't want you to come," he said.

"So I gathered from your news release. Is it over between us, then?"

"I hope not."

"Goddam it, Isaac, quit jerking my head around! It's been jerked around enough. Do you love me or not?"

"I do, but that doesn't mean I should take you with me. In fact, that's one of the reasons I'm not taking you. I've got

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this Transmat mess to think through, and my Mission to the Stars, and *you*. And you're priority number one. You're what I've got to think about the hardest. How objective could I be if you were there?"

"We're in love, dammit! We're not supposed to be objective!"

"Are we in love? Or are you just submitting to voluntary possession?"

Laura tried to prevent her face from turning to stone, her voice from growing chilly, but failed. "So that's what you think of it," she said.

Bentz flinched and released her hands. "It's something I've got to think about, darling—your mental and spiritual health."

Laura softened. She took a seat on the couch. Bentz sat beside her. She put an arm around him.

"God," she said, "I hate love."

Bentz laughed and she laughed a little, too.

"Listen," Bentz said. "If you think it would be best to undo your love for me again, don't let any consideration for me, uh, stand in your way."

"Don't worry about that," Laura said. "I can't."

They kissed. It was slow and sad and rather chaste.

"How come you're taking Mixter along?" Laura asked, when they'd finished. "I mean—how can you stand him?"

Bentz smiled. "He's so well intentioned. And he's good for me. He keeps trying to cheer me up. Of course, every time he tries he winds up depressing the hell out of me, but he always does it in a way that sets me to thinking."

"Has he tried to cheer you up about me?"

"Yes. He says that I have to remember that man is only information, after all, and information is easy to change. And if you can change it for the better, why not? What's so holy about the particular bunch of information that happens to come into existence at birth? How can Korngold be faulted for bringing more love into a world that's particularly short of it? Especially in your case—he seems to think that naturally you're a real devil."

"He's right."

"Well, anyway, I'm sure he's off base, but it may take a while to figure out exactly *how*."

"How long is all this thinking going to take, Isaac?"

"A year, at the very most."

"A year!"

"It's not easy coming up with right answers. The last time I did this kind of meditation was two decades ago, when I was trying to decide whether or not to start the Searchers. That took three years."

"Do you think we'll get back together after you're done?"

"I hope so. Sometimes I'm almost certain we will."

"I don't know if I can stand it, being away from you so long."

"Korngold didn't accept your resignation," Bentz said. "Why don't you go back to Lübeck and work until you hear from me?"

"I don't know. After what Korngold did to me . . ."

Laura clapped her mouth shut when she realized what she was saying, but

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Bentz's eyebrows were already raised almost to his hairline.

"There," he said. "You see?"

"I'm not talking about what they *did*, just the attitude they obviously have toward me."

"Those things are tied up together. That's part of what I've got to think about. And another thing, Laura . . ."

"Yes?"

"Please, darling, lay off the magickal exercises while we're apart. Dharana and Pranayama are okay, but no invokations and no astral travel. Please?"

For no reason she could figure, Laura suddenly became very frightened. She pulled Isaac close and said, "If you're not going to be my guru for a while, what happens to your objections to sex?"

"What objections?"

Two days later Bentz, Mixter, and the others left for Kentucky, and Laura was on her own.

She felt lost, and trapped. Trapped by the World, by time and space which separated her from what she lived for. The magickal and spiritual realm Bentz had shown her—*that* was where she really belonged. What she did with her body while she waited for Bentz was unimportant, so she didn't do anything special with it. She stopped hanging around Eye Street. Occasionally she wandered around Washington reading minds, intending to pick up a few extra bucks with a little blackmail, but she couldn't keep up an interest. Most of the minds she read were so petty, so tied to the mundane, that they made her ill.

Mostly she stayed in her hotel, coming out of her room only to eat at the greasy snack bar and to meet the mailman at the desk at four o'clock, pleading with the gods for a letter from Isaac that never came.

Bentz had told her he wouldn't communicate with her until he'd thought things through, but she couldn't quite believe it. And when a couple of weeks had passed, she couldn't believe it was taking him that long to come around to her and Mixter's point of view. *The answer's so simple, really*, she thought. *Why is it so hard for him?*

While she stayed in her room she did her own kind of meditation, mostly on her recent past. She began to believe in preordination. All espers, but she especially, were basically magickal creatures. It was preordained that she'd meet Bentz, that she'd learn to enter the astral sphere and find her true self. Already she'd learned its general outlines —twisted, perhaps, but her own. And powerful! It was preordained that the two most powerful spirits in the world should meet and love. Korngold had only thought they were making her their tool when, in fact, *they* were a tool of something far more potent.

She longed to leave her body, to get to know her true self truly well, but she'd promised Bentz to refrain from astral travel. Well, come to think of it, she hadn't exactly promised. . . .

Isaac! Where are you!

Once, when she was feeling down, she put herself in Isaac's place. She asked herself how she'd feel if Isaac's love for *her* had been engineered. The answer was that she wouldn't be able to stand it. She'd feel it as a terrible personal insult. She'd never want to see him again.

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She knew, of course, that Isaac wasn't Laura—Isaac was a somewhat less powerful Self, but considerably less twisted. She didn't have to worry about him feeling that way. Still—it made her very nervous for a while. She tried looking in the mirror to calm herself, but that left her cold these days. Her body just didn't matter.

Eventually, she found relief from her nervousness by resuming meditation.

Maybe she really never would see Bentz again in this body. What did that matter? In the real world—the world of the spirit, it was preordained that they would be joined. She remembered that strange, sexy meeting of their astral bodies and longed for it, ached for it. *That's what our love is really all about—the merging of the fields, the joining of our two fitted spirits.*

One day Bentz's soul, merged with his personality, as hers was, would leave his body for good, and then he'd realize . . .

Wait a minute! Why worry about all this worldly crap, when their spirits would join on the astral plane anyway? What obligated her to cart a load of flesh around for fifty-odd more years, cheapening their love? Why not just wait for him where he was bound to come?

She flopped onto her bed and was out of her body in a split second.

She'd lost nothing with lack of practice. After all, this was her world, a much better world, and she hurtled through her ceiling feeling utterly at home in it. Again she heard colors and smelled sounds and saw Symbols.

It was an animistic world—one where every thing had its own intelligence. She zipped into and out of the minds of the most unlikely creatures, not only reading them but moving them, influencing them. She gloried in her own power. None of the other Reformed Sufis was able to do things like this, not even Bentz. Her power was superhuman.

That was the explanation! She *wasn't* human. Really, she'd known that in her heart all along. That American maid had known what she was talking about.

She found herself flying west, skimming the groaning clouds, stretching Kentuckywards for Bentz. When she realized what she was doing she stopped herself. She would wait for him here.

She wouldn't be bored while she waited. There was much to do. If she could hook up some of those Ipsissimus-grade Magi who'd decided to leave their bodies for good, they could probably encompass this world, and run it. She called out to them in a voice redolent of lilac, but received no answer at all.

Again she felt the beginnings of involuntary motion—this time back toward her hotel room—and again she stopped herself. She knew what was happening. Her stomach was growling. She hadn't eaten all day.

For the first time she faced the obvious fact that, without her, her body would die. And when that happened, her purely spiritual life wouldn't be a matter of choice any more. There would be nothing to go back to.

It was, truly, the moment of decision.

And at that moment, as she decided to abandon her body, a voice that reeked of brimstone said, "Welcome home." ■

● Cream rises to the top. So does fat.
Kelvin Throop III

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the reference library

By Tom Easton

The Nonborn King, J. May, Houghton Mifflin, $?, 397 + xli pp.
Operation Longlife, E. H. Price, Ballantine/DelRey, $2.75, 320 pp.
Coils, R. Zelazny and F. Saberhagen, TOR, $2.95, 250 pp.
Myth Directions, R. Asprin, Donning, $5.95, 169 pp.
Up to the Sky in Ships, A. B. Chandler, and **In and Out of Quandry**, L. Hoffman, NESFA Press, $13.00, 160 + xvi pp.
World of a Thousand Colors, R. Silverberg, Arbor House, $14.95, 329 pp.
Pulling Through, D. Ing, Ace, $2.95, 261 pp.
Flim-Flam!, J. Randi, Prometheus Books (700 E. Amherst St., Buffalo, NY 14215), $9.95, 342 pp.
Philosophers Look at Science Fiction, N. D. Smith, ed., Nelson-Hall, $20.95 cloth, $10.95 paper, 204 pp.

One of the hottest series to hit the market lately is Julian May's "Saga of Pliocene Exile." Volume I was *The Many Colored Land*, which described a one-way time gate which misfits could use to escape a galactic civilization based largely on mental powers into an empty Earth some six million years before the present. The story followed a handful of such misfits on their pursuit of romantic dreams, only to find a Pliocene Earth occupied by aliens. The aliens, the Tanu and Firvulag, are quite capable of interbreeding with humans, resemble fairies and goblins, and have powers of their own. Worse yet, they enslave humans with collars or torcs. Gold torcs amplify psychic powers. Grey and silver torcs enable communication and control.

The Many Colored Land made a splash, and with some reason. Though its plot was crowded and confused, it was thoroughly imagined, vivid and rich and full of charm. And once you swallowed the irrationalities of cross-breeding, powers, and zero impact on the

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fossil record—perhaps accepting that May is simply playing games with legend—it was even fun.

I now have Volume III, **The Nonborn King** (he came from a vat). It too is crowded and confused and vivid, but now the fantasy component overwhelms the SF. The irrationalities dominate as Aiken, the powerful exile who became king when fellow-exile Felice flooded the Mediterranean and spoiled a field day by drowning the Tanu nobility, consolidates his power. Aiken plays uncooperative Tanu off against recalcitrant and vengeful Firvulag; Firvulag and mutant "Howlers" off against free humans; and all against a band of humans who, having failed to conquer the galaxy twenty-seven years before, had fled to Pliocene Florida. He seems to succeed, for his powers are still growing and by volume's end he alone stands amid the wreckage, but he is impossible to believe. He is a weakly drawn superman, with only artificial, insignificant weaknesses, inventing new powers as he or the story needs them. How can he fail? I doubt May will let him, and Volume IV, *The Adversary*, will in its promised paralleling of Ragnarok and Armageddon enshrine him with the gods.

Clearly, I am not recommending *The Nonborn King*, even to those among you who enjoyed *The Many Colored Land*. My problem may have something to do with never having received a review copy of (or bought, or borrowed) Volume II, *The Golden Torc*. I doubt that would have made much difference, though. *King* opens with a thirty-one page synopsis of the previous two volumes, and I don't feel I missed anything crucial.

This is "one of the hottest series"? Sadly, yes. *Land* and *Torc* both made the *Locus* best-seller list. So will *King*. But "hottest" does not equal "best," and we can all take heart that Gene Wolfe has stayed ahead of May on *Locus*'s list. *That's* best.

E. Hoffman Price's **Operation Longlife** is fun. The hero is 186-year-old Avery Jarvis "Doc" Brandon, the wealthy genetic engineer responsible for the chimp-descended simianoids, who look human and act better. In a U.S. gone to the socialist dogs, he owns an offshore island where he raises teak and babies. The latter he slips into human families as adoptees, not revealing his secret plan to improve the species with simianoids. The former is his excuse for maintaining a colony of Malaysians. He is an old-time plantation grandee, complete with exotic bed-warmers. He is also a Heinleinian hero who seems explicitly modelled on Lazarus Long. Now, this isn't necessarily bad. I myself love Long and have never had enough of him. However, Brandon is to Long as store-bought chocolate-chip cookies are to homemade. Price's handling of the character isn't quite up to Heinlein's—the flavor is less rich, and I still crave the real thing!

The story begins when the U.S. government realizes Brandon's longevity and starts pressuring him to share the secret with the masses. There's no secret to share, but no one believes that. Brandon must play politics, pursue on Mars a long-lost hero who has been holed up with an asteroidal civilization dating back to millennia-gone Earthly spacefarers, and get embroiled in the war that ensues when the U.S. invites a Soviet division to the Gulf Coast for war games —and then to take over.

The plot is rich with incident and well sprinkled with humor and sex. The plot is chaotic, though, and the end is weak, inconclusive, and unsatisfying. Never-

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theless, I enjoyed the book. I expect you will, too, though you may not want to give Price any prizes.

As computers pervade society more and more, we can expect to see more "computer fantasies" like **Coils**, by Roger Zelazny and Fred Saberhagen. This subgenre of SF isn't new, for there have been a few others like *Coils*.

Coils opens with Donald BelPatri, a man with no past but plenty of money. He begins groping for memories, and mysterious forces steal his girlfriend and threaten his life. The memories return, bit by bit, and with them his peculiar talent: he can enter a computer, sense the flows of data within it, and even alter its programming, all by some variant of telepathy he calls "coiling."

Once, BelPatri had been part of a team devoted to industrial espionage and sabotage. He had been well enough paid to set aside his conscience, but when he found out that one member of the team (a psychokinetic healer) was an assassin, he rebelled. His employer then wiped his memory and pensioned him off, hoping that in time he would return to his senses.

He does, but not quite in the way his erstwhile boss had hoped. His power has matured while dormant. Now he can not only spy, but also defend himself and attack others. And he fiercely resents attacks on himself and his girl. He goes on the warpath, and he finds a strange ally in an emergent intelligence.

The authors do not convince. Telepathy is hard enough to swallow by itself. Computer telepathy is even harder, and it needs a much more persuasive treatment. It is not enough to realize that a new social and technological phenomenon will inevitably prompt new wishes, myths, and mysticisms, and then cater to them. Surely the zanies *will* be talking about reading the computer's mind and giving James Randi (see below) whole new crocks to spill, but need SF writers waste their talents pandering to these nut cases?

I might be kinder to *Coils* if its hero were not such a superman. His weaknesses are unimpressive, and made more so by the presence of his phantom ally. He is a comic-book character not nearly as appealing as Travis McGee, on whom he may be modelled. John D. MacDonald gives his heroes psychological agonies that strike much closer to the reader's heart. So do both Zelazny and Saberhagen, when they are performing nearer their respective peaks.

Robert Asprin aims no higher, in a way. He displays no literary pretensions. But he doesn't pander, either. He has fun with his stories, and so much of it that highbrows and lowbrows together can laugh their heads off. This strikes me as a far more successful and honorable way to grab the maximum market.

My example is **Myth Directions**. It's a sequel to his *Myth Conceptions*, in which young Skeeve becomes the apprentice to a demon (dimension-hopper) named Aahz who had lost his magical powers. He acquires a dragon, fights and wins a war, and ends as a court magician. In the sequel, Skeeve and

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Aahz are visited by the lovely Tananda (trollop sister to a troll), who takes Skeeve off to find Aahz a birthday present. They visit a series of unearthly dimensions, ending in Jahk, where they spot a certain obscene trophy that blesses the winner of the Veygus/Ta-hoe playoffs. They're all set to swipe it when someone beats them to it and the cops nab Tananda.

Then must Skeeve fetch Aahz to save the situation, ultimately by challenging both Veygus and Ta-hoe to a three-way playoff. The trouble is that the game is *rough*, with only *edged* weapons prohibited!

Enough. You get the idea, I'm sure. Slapstick misadventures galore, with punning references to the world we know (would you believe Aahz once fought the wizard Dis-ne, speaking of sorcerer's apprentices?). A beautifully inept hero who always comes out on top thanks to luck and friends. Great fun, well supported by Phil Foglio's drawings, and owing most, perhaps, to the Three Stooges.

It is the honorable custom of the New England Science Fiction Association, Inc. (NESFA, Box G. MIT Branch Post Office, Cambridge, MA 02139), to honor Worldcon guests of honor with books featuring his/her/their work. Chicon IV's book is in the classic Ace Double format, though hardbound. One side, **Up to the Sky in Ships**, displays seven previously uncollected stories by A. Bertram Chandler, including the first appearance of Grimes ("Chance Encounter," 1959). The flip side, **In and Out of Quandry**, displays Lee Hoffman's work. She has one mordant story here, "Soundless Evening" from *Again, Dangerous Visions*. The rest offers a history of her fanzine, *Quandry*, and of the great hoax, along with a few tidbits of fannish *memoirs*. The two covers are by Kelly Freas, artist GoH.

Chandler's work is familiar. I hadn't seen these particular stories before, but I knew the flavor, and they held no surprises. Hoffman, on the other hand, was largely new, for I rarely see the fannish side of SF. And she was a delight, a pleasure, clearly deserving well her fan GoH status in addition to her laurels as a pro writer. Get the book if you possibly can, but hurry—NESFA only printed 1,800 copies.

Early in his career, Robert Silverberg gained a reputation for hackwork, for great speed and productivity, for a severe shortage of agonizing over word and idea. Only a little of this shows in **World of a Thousand Colors**. The book is a collection of nineteen stories dating mostly from the late 1950s and early 1960s, when Silverbob was young and hungry. In his own words, "A demonic energy possessed me, I bubbled with ideas for stories. . . . Every morning I went to my desk and watched stories come flowing from my typewriter. In a really hot week I might write one a day, Tuesday through Friday. On the weekend I rested and on Monday I made the rounds of the editorial offices, dropping off last week's output and picking up any that might have been rejected. . . . It was a lively existence, though not one that anyone could continue for a protracted period if he wanted to stay sane."

In this book, the three stories I like best are "Neighbor" (1964), "Journey's End" (1958), and "The Fangs of the Trees" (1968). Most of you have probably read them. The first is a classic grudge tale with a twist, the second one of a man's search for continuity among

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hostile aliens, again with a twist, and the third one of love and priorities, with no twist. These three, and all the rest, display Silverberg's typical neatness of conceit and deftness with plot and dialog. Character suffers, but that was (and is) the norm in the field, and Silverberg does show signs of his later ability to handle it better. His hurried, unreflective pace shows mostly in superficiality of theme, though that marks less-prolific SF writers as well. Really, we can damn Silverberg's early work only by comparison to his late efforts. He made a very respectable showing, even if his stories did not pretend to the status of high art as attempted (and occasionally achieved) by Budrys, Sturgeon, and a few others.

Silverberg slowed his early pace when he started getting book contracts. Then, it seems, he gave himself time for reflection. He acquired a muse and did much better work. Yet he didn't slow down much. His productivity dropped to perhaps twice that of other successful writers. Their envy stayed green.

Dean Ing's **Pulling Through** is a strangely didactic novel. In fact, it's hardly a novel at all. The story concerns the immediate aftermath of nuclear war. Hero Harve Rackham is on the road when the flag goes up. He rushes home with his passenger, streetwise Kate Gallo, to wait for his sister and her family and to start preparing his shelter. Together, they jury-rig all they need to survive the fallout, from piles of dirt over the basement windows to an air pump and filter made from rolls of toilet paper and a cardboard box. The plot is survival, spiced by encounters with dazed refugees and crazed cons.

Ing's goal is to show you, the reader, how to pull through, using only what is on hand. Accordingly, he follows the story with a series of articles on how to build that air pump and filter, how to make a home electroscope and fallout meter, how to give yourself a power supply with bicycle generators, how to cobble together a toilet, and how to stock your "tenacity chest." He offers plenty of information that will be literally priceless if you ever need it. *But* —the story is less a story than an excuse to lecture. You aren't, I'm afraid, likely to buy the book unless you are at least a little paranoid about nuclear war in the first place. Then you will find it as compact a compendium of useful lore as I suspect is available anywhere. Better yet, you will find it a useful lesson in the idea that you *can* survive without massively and expensively constructed shelters.

I am not myself paranoid enough to buy this book. Perhaps I should be. Ing would tell me so. At any rate, now that I have this little tome, given by the publisher in hope of a review, I will keep it. I just *may* need it one day, though I pray I won't.

On the other hand, I have a friend. I helped pour the concrete for his underground home, two stories with plenty of south-facing glass. He set up his own water supply, a large springfed cistern, which could last for weeks after cutting the pipe to the spring. The house could be tightened up easily, I think, to keep out the radiation and fallout. He's *very* handy at jury-rigging. Maybe I should give him my copy and plan to move in with him!

If there is anything more futile or frustrating than beating a dead horse, it has to be beating a live one that never seems to notice. Poor James Randi! He is the professional magician who has devoted a large part of his time to debunking various psychics, mystics, and

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other frauds, even offering $10,000 of his own money to the first person to convince him by demonstration that psychic powers are truly real. He has exposed many times the simple conjurors' tricks the mindreaders use, and he has never yet changed a believer's so-called mind.

Flim-Flam! recounts his efforts and those of others, often in connection with The Committee for the Scientific Investigation of Claims for the Paranormal (CSICOP) and *The Skeptical Inquirer*. He begins with a paradigmatic case of childhood foolery and impressionable adults (including Sir Arthur Conan Doyle), the Cottingley fairies. Then he attacks the Bermuda Triangle, astrology, OOBEs, UFOs, the giggling guru (guess whoru?) and levitation, ancient astronauts, credulous, sloppy "scientists" as epitomized by Targ and Puthoff ("the Laurel and Hardy of psi"), biorhythms, psychic healers, dowsers, psychic photographers, fraudulent religions such as spiritualism, and more. He has strong words for the frauds and for the credulous, uncritical meatheads who swallow even the crudest of idiocies.

Randi is a vigorous, pungent writer. He feels strongly, and he shows it. He's right, and he knows it. He is also enormously impatient with fools, and this doesn't help his cause. He knows that he cannot hope to sway the believers. If he is to do any good at all, he must reach the uncommitted, meaning largely the young. And all too often he resorts to mockery, describing a "psychic" and his or her tricks and then braying, "What a jackass!" I fear this tone may be counterproductive, echoing as it does the tones of his targets.

I am *not* saying Randi's targets do not deserve mockery. They do, for they *are* meatheads and idiots and jackasses, mockeries of rational human beings. But a far more effective vaccine against their idiocies might be a book titled *How to Be a Psychic*, aimed at juveniles, and showing how various folks do their tricks. Some people might take the book seriously and swell the ranks of the idiots; they're surely hopeless to begin with. Others would absorb the book and then, confronted with a so-called psychic, laugh.

Do you hear me, Randi? I know what you're trying to do. I know why. I agree with you. But I suspect you need better tactics. You're not reaching or convincing the right audience.

Do you think only fans and scientists take SF seriously as literature? Do you think only fans and futurists take it seriously as a source of ideas? Do you think it no more than a sort of tech-oriented game-playing?

You're wrong. There is a group of scholars, in the most traditional of molds, who take SF seriously indeed. Let me quote from the introduction to **Philosophers Look at Science Fiction**, edited by Nicholas D. Smith:

". . . science fiction is the handmaid of philosophy.

"The value of science fiction to philosophy is evident from the nature of the literature. [It] isolates essential and significant facts of existence by projecting what is familiar into unfamiliar contexts, while [it assumes] 'givens' are open to modification" (pp. 4, 5).

". . . Science fiction as we have described it shares a fundamental goal with philosophy: the discovery of what is essential and valuable in reality. Philosophy pursues this goal with its own peculiar methodology of analysis and dialectic. Although science fiction employs the quite different techniques of fiction, it can serve as a very valuable

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aid to philosophy as a heuristic, diagnostic, and pedagogical tool.

"Science fiction has been found to be especially useful in the classroom in enabling students to discover and appreciate philosophical issues" (p. 9).

"The fact that science fiction provides concretized projections of abstract possibilities and values is important to philosophy. The wide range of [SF] provides a rich source of fictional 'case studies' or 'conceptual experiments' in which it is possible to put philosophical presumptions to the test" (p. 12).

That is, SF plays the same games the philosophers love, though in a different idiom. This is quite well documented in the book's thirteen essays and one story (Lee Werth's "On Again, Off Again"). Many of the essays have been presented before the Popular Culture Association; their assembly here is useful, perhaps especially to the SF reader or writer who yearns for intellectual respectability (though not necessarily under the aegis of the PCA).

The book's brightest single gem may be Justin Leiber's discussion of his father, "Fritz Leiber and Eyes," in which he traces a number of the connections between Fritz's life and his work. Here we see a son with a great and informative regard for his dad, and if all you Leiber fans buy the book for this essay alone, you won't feel cheated. ■

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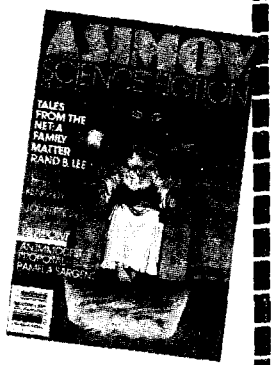

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THE LEAVES OF OCTOBER

Don Sakers

When sentient beings are different enough, mutual understanding may be a *long* time in coming. But not unattainable . . .

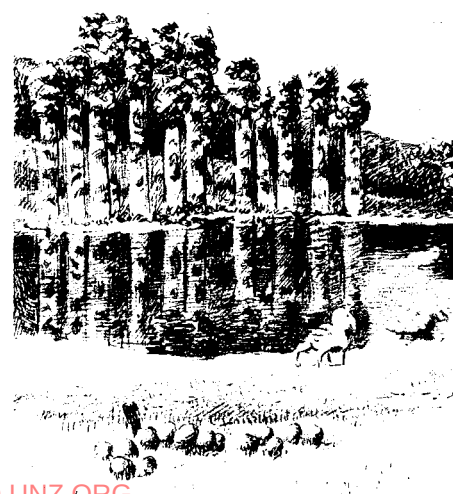
I.

I am but a sapling, yet already I have become proficient in the reading of the First Language, in the rustles and whispers of the Second Language, and even a bit in the vast soundless waves of the Inner Voice with its meanings from beyond the sky.

I am also skilled in relations with the other orders of life, although this world has circled its sun but a dozen times since I broke soil. You may find it strange to hear a Hlut speak of relations with other orders—these are the Hlutr, you may say to yourselves, who stand so far above the others that they touch the clouds, who live so long that they watch mountains change, who talk among themselves in their two languages (for what can you know of the Inner Voice?) all oblivious to the world. How, you may ask, can they even be aware of others?

And your thoughts are partly right, Little Ones—but only partly. True, the Elders . . . those who are old even as the Hlutr count time . . . do not pay that much attention to others. True, they live so slowly that your lives are but a flicker, and to them you are less than goats are to a mountain. Yet you must not make mountains of us, Little Ones, for we are alive (even as are you) and we know the pains and beauties of living. We feel kin to all life.

Let me assure you that the Hlutr *do* care, tiny and ephemeral as you are. We know you and feel you and cherish you, although you may not think so; for truly, we do not speak with you and seldom acknowledge you. We are aware of the flying creatures who perch upon us; of the land beings who jump, walk, and



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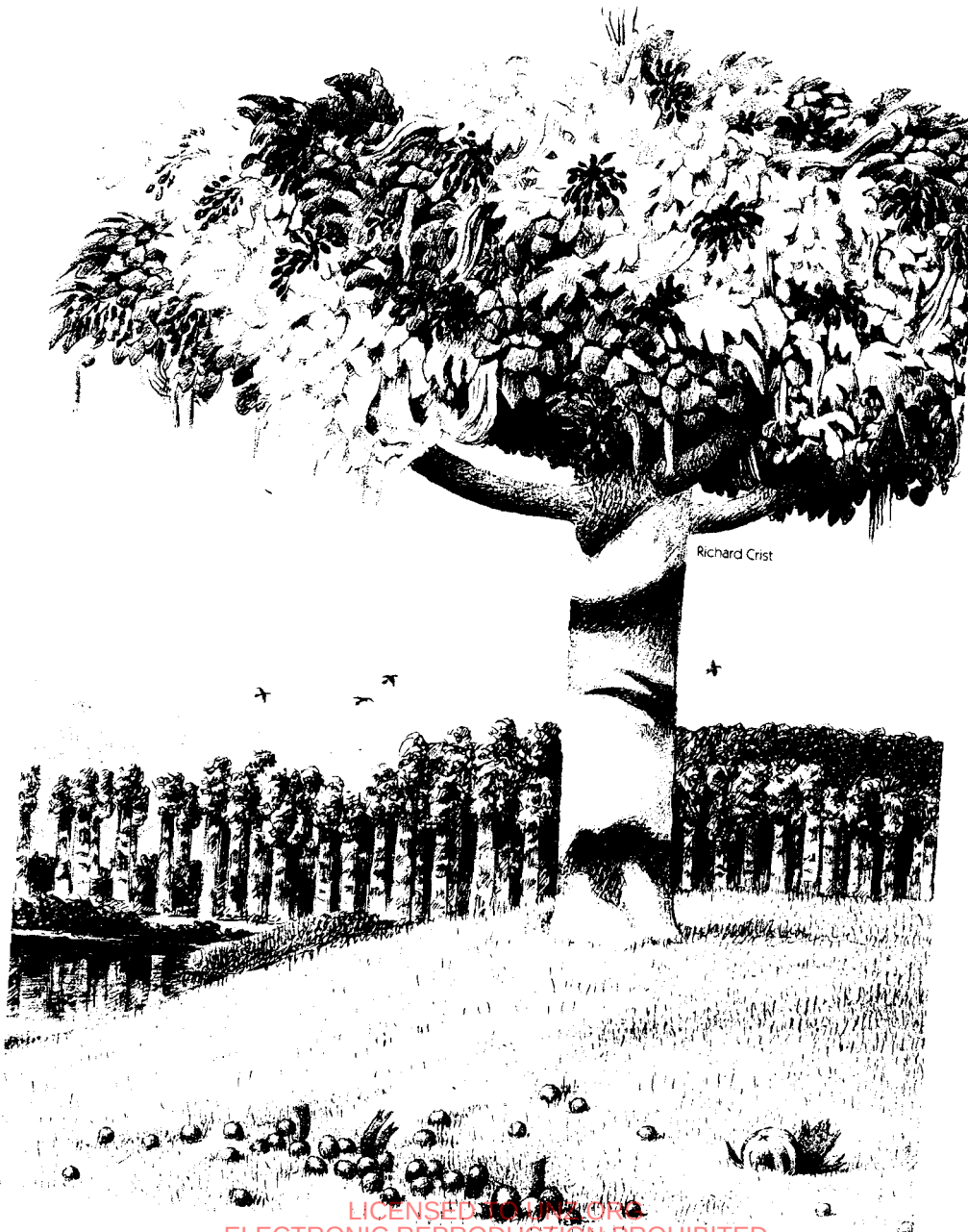

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creep around us; of the grubs and many-legged crawlers who live on us and in us and within the ground beneath our roots. We appreciate, we feel for, we cherish all Little Ones—down to the tiny, primal bits of pulsing, growing, mindless life within you and their dull feeling for the Inner Voice, their dull awareness of the great world about them.

I have been taught to be even more conscious of you, Littles, than are my brethren Hlutr. I have been taught by Elders and normal Hlutr alike, living so fast that I have fit many of your lifetimes into my scant dozen years. With each day I grow better with the First and Second Languages, the expressions of my people; with each day I become more attuned to the waves of the Inner Voice . . . not only that I might communicate with my brethren of far-off worlds, but also that I might talk with you, Little Ones.

Why, you may ask, have I been created this way, why have I been bred and trained into such a non-Hlutr type of Hlut? You may wonder what need the Elders have of a Hlut like me. I wonder too, my Littles. I have some idea. There are whispers in the wind, and pulses in the Inner Voice, that bear news across the galaxy and around the world to me. There is news from the Ancients of Nephestal, whose culture is almost as old as the Hlutr.

The Daamin, the Ancients, tell us that there is a new race ready to come forth and join the Scattered Worlds of the Galaxy. We will all have company soon, dear Little Ones, and I believe the Elders wish to be ready for these new ones.

There are strange stories about them, stories which I do not quite understand. The Daamin tell of these new ones, these Humans, and of their distant planet and their odd ways. We have learned of our stunted relatives the Redwoods of Terra; we have been told of Animals and Dolphins and some of the Humans' strange societal customs (some of them a little like the many-legged crawlers and some of the grubs). In their own way they have studied the Universal Song and learned some of its principles. Enough, at least, to harness some of the power of the First Cause. And they are coming, Little Ones; already their seeds flash outward from their world at speeds as fast as the Inner Voice can move, and soon they will be here among us.

Little Ones, we must prepare for the Humans.

You are afraid of them, Little Ones. Their silver seed sits in the clearing, and it frightens you. Their odd alien smell hangs over the wood, and you are alarmed. They have come among you with boxes-that-make-noise, and you have run from them. And now you seek sanctuary among us.

Do not be afraid. The Hlutr will care for you. As we *have* cared for you, for your mothers and their mothers, back beyond the memory of the Eldest of us all. Ever have the Hlutr cared for all innocent Little Ones. Ever have we delighted in you. Ever.

Look with me, Littles, at these new creatures. Try to hear the Inner Voice as it sings in them. For truly they are alive, and they are children of the stars

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as are we all, Hlutr and Flyers and Crawlers and Grubs alike.

They move among us now, as you tremble and scurry into your burrows and caves, frightened by their noise and their odor and their strangeness. Only the Hlutr stand, unafraid.

Let me help you to know them, that you may not fear them. My brethren Hlutr speak to me, asking me to explain the Humans—let me explain to you as well. Those harsh sounds are like unto the Second Language, although clearly they lack the quiet soughing beauty of Hlutr speech. Listen to me, Little Ones, and you may grasp something of what they say. The smaller one speaks.

"It's the trees, Karl. Listen—no wind, and yet they seem to be making noise at one another."

"Talking trees. Right."

"What else? Look at the color changes in those trunks. There's some sort of pattern there, I'm sure of it. That's communication on some primitive level."

She feels wonder, Little Ones, the same wonder that all feeling creatures experience when they contemplate the mystery and majesty of the Hlutr.

But the other . . . it sends discord in the Inner Voice. Listen:

"They're plants. How would they even sense the color changes?" He listens to his boxes; they seem to speak to him in some bizarre form of the First Language. "Ship's instruments misread. There's no ore concentration here. Lousy site for a settlement. Let's get back."

"No, Karl. Look—the leaves are multicolored. Maybe each one absorbs a different shade. Or maybe the black ones are sensory apparatus. This needs more study."

"Two more worlds to check on, and you want to study trees."

"We can take a specimen back to Terra."

"Sure, you're going to bring back a fifty-meter tree. I can see Captain's face now."

"Look at this one—it can't be more than three meters tall. It would fit in a corner of the starboard cargo hold." (Surely you have noticed, Little Ones, that the Elders have not allowed me to grow to but a fraction of my potential.)

"Fight it out with Captain. I want lunch. Here, mark it on the map so you can find it again."

They wander off in the direction of their silver seed. Yes, I can see that you did not understand more than a little of what they said. I must confess that *I* understood all too little myself.

But the rustles in the wind convey meaning to me, meaning of the Elders' plan, and I am afraid that I understand far too much. Fear stirs in me, just a bit. I ask if there is no other way, and they remind me of the story of the Redwoods. We cannot allow that to happen to the Hlutr; for where would the other orders be without the Hlutr to protect and guide them?

Perhaps Humans acted with ignorance, with the Redwoods. We must see that it does not happen again. We must understand why it was allowed to happen in the first place. A Hlut must go with them, back to their world.

For the last time I listen to the wind of my home world; for the last time I feel the coolness of my home soil.

A Hlut must go to Terra.

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Remember me, faithful Little Ones, when I am gone.

II.

Such a different world! And yet, in some ways, not so unfamiliar. *You* are here, my precious ones; true, you are not the Littles of the world I have learned to call Amny—but all Little Ones are the same for all their infinite diversity. Already there are flyers and crawlers about me, already I can feel some grubs tentatively testing the new-scattered dirt at my roots. Welcome, Little Ones, welcome.

It is good to feel fresh air, fresh soil, fresh light again. They have been kind to me, these Humans . . . and the voyage was not a long one. I lived slowly, more slowly than I have ever lived before, and it seemed no more than the merest flicker before we were on Terra.

I have shouted with the Second Language until my leaves hurt from quivering, and all the answer I have received is the meaningless murmur of wind, and the rhythmic whisper of waves on far-off shores. It is lonely—although we have these sounds on Amny, there is also the rustle of intelligent conversation from my brethren.

Here on Terra, though, all the plants are nonsentient. However much they may resemble Hlutr form, they lack the Hlutr mind. The Redwoods, perhaps, were intelligent (although they never communicated by Inner Voice with the rest of the Hlutr. Perhaps they were deaf in that sense). Some form of Hlut, no matter how primitive, must have existed on Terra to guide the long march of animal evolution from Pylistroph seeds into customary channels—for the Humans are of the same biochemistry and general structure as so many other races in the Scattered Worlds. It saddens me that none of these ur-Hlutr are left to perchance answer my calls.

No matter, though—there is enough else to keep me busy for a long time.

Those who watch me, for example. I have an honored place in the middle of a botanical garden and many Humans come to stand before me, looking at a tiny metal rectangle and gazing at me. I greet them with the First Language (which is not as much of a strain as the Second) and they watch. Some even respond with flickers of glee.

Terra has spun six times since I arrived here; and although the first five turns were spent in isolation to make sure I was rid of all Amny's Little Ones, the watchers came. I have learned much about those-who-watch.

Most are full-grown Humans (how strange to call "full-grown" creatures who cannot be three-seventieths the height of a mature Hlut!) making the unending noises they call speech, their minds filled with distortions of the Inner Voice concerned with time and rush and ever, ever with movement. With a few, there is curiosity and even a healthy appreciation of me. (My brethren are delighted to learn that Humans can be awed by the sight of a Hlut, but all too often my brethren think too highly of the Hlutr place in the Universal Song.) But none of these adult Humans, not one, is ever content. Their thoughts and feelings, when they can be read at all, are fastened upon something else. Always they have little regard for the Universal Song of which everything is a part—Humans, Hlutr, botanicalgarden,

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and Terra too. Always they have even less regard for the magic and beauty of themselves.

There are others, however, who come to look . . . and I find them much more pleasing. These are the Human seedlings, who are always in the care of the mature Humans (you need only think of the many-legged crawlers who protect their eggs and larvae). The seedlings make noise too—and their noise is more raucous and less soothing, even, than the speech of the adults. Despite that, my Little Ones, if you will look at them with the eyes of the Inner Voice you will see that they are simpler than the adults. These children are more like *you*, Littles, the way they happily watch as the colors of the First Language race across my trunk and through my leaves. Sometimes I feel that I can talk to the Human children, as I can talk to you, my dears.

Some come who are upset—as you are often upset, when you are hungry or your young are threatened, or when your mate has died. For some of them, those who will listen, I can work a twist of the Inner Voice and they go away happier, more peaceful. I do not mind this work—indeed, when has a Hlut ever minded helping the Littles?

But I feel that there is more important work I should be doing. The Elders have not expressed themselves well in the eddies of the Inner Voice—and those eddies are hard to read across the parsecs, with all the interference of all the Hlutr on other worlds. I shall think hard, and consider deeply, and perhaps it will come to me. Following the orders of the Elders, I shall try to talk with the Humans—although I have been here six days, and have had little if any success in making them realize that I can speak. However, we must not expect Humans to be as fast as a Hlut would be; I shall give them time.

Meanwhile, I have those-who-watch, especially the children. And I have *you*, Little Ones.

III.

There are parades, there is joy and cheer all around. The Botanical Garden is hung with bright holos and flags and signs, and the children skip about shouting and laughing at my colors; I am shouting in the First Language to produce pretty patterns for them.

You must be careful, Little Ones, not to get hurt on this day of joy. The Humans are often forgetful of you, and you are all too used to the careful attention of a Hlut. So scurry when you see the Humans coming, and watch their feet lest you are tromped on. The children are the most careless. You must not think ill of them—for if you could but see the Inner Voice within them as I do, you would know that they are filled with joy and not malice. Their minds are small, though, and they can only pay attention to a few things at a time. And some of you are so little that you cannot take much of their joy.

Why, you may ask, are the Humans so exuberant? You have seen before parades and fairs and celebrations, but none in your experience match the reckless joy of this day. Gather around me, Little Ones, and I shall try to explain. Although I do not fully understand.

You see, Humans love one another with powerful feeling. You may understand this, tiny crawlers, but the others

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may not be able to see it. And Humans have a strange desire to see themselves in many places in the Universal Song. The more places, more Humans to love. (Yes, birds, you may rest upon my branches.)

Well, my Littles, this day we see the declaration of much love for many Humans in the Galaxy. This day, there has been the proclamation of an Empire. (Come, squirrels, and sit with me.) This day, starships will begin to sweep across the Scattered Worlds and unite all the colonies of Humanity. There will be much pain and much joy and ever so much glory. It will be a beautiful and tragic addition to the Universal Song.

Yes, I know it is a difficult thing to explain. I must admit, now that you are all confused by my explanation, that we Hlutr do not grasp the Human drive for Empire any better than you do. We have received some conception of it from the Daamin, and even more from the sons of Metrin, who have a similar drive. And there have been many examples in the distant past, from the sad Iaranor to grand Avethell and all her daughter worlds.

It must be a very animal thing, not known to plants. It is but one of the mysteries about the Human race. They will lose themselves in this power-and-glory struggle, lose themselves to the most evident joy and the strongest emotions.

Why Humans should wish to lose themselves is another question entirely.

It has been almost sixty years, my Little Ones, since I have been on Terra. I have grown, as all Hlutr grow (either slow or fast as they wish) . . . can you believe that there was once a time when I was only as tall as a Human, I who now stand as high as ten Humans one atop the other? I have seen many things: I have watched children grow and adults die, and I have seen new ones born. (They are truly delightful when they are born, so very vegetable, just like tiny seedlings pushing their heads into the light for the first time.) Still I do not understand them. I have been living very quickly, as quick or quicker than Humans themselves live, and I have been thinking very much.

I suffered, Littles, across Human light years with the rape of the ecologies of nearby Laxus and Leikeis and other worlds. I have watched thousands of red and beautiful sunsets, and have rejoiced with all the creatures at the stinging freshness of Terra's clean rain. I have sung with the Whales, greatest of my Little Ones, once I found the way to pick up their own Second Language from the world-seas.

Humans have not talked with me. My brethren on Amny and other worlds tell me that Humans ignore them as well. After a few regrettable murders, the Human colonists have left the Hlutr alone. Every once in a while someone wonders about our color changes (although to my knowledge, not one has ever suspected the existence of the whispers of the Second Language —mayhap because it sounds so much like the wind . . . but they have never quite realized that the First Language *is* language.

That is why I am so happy today, Little Ones. I have great hopes for this Empire of theirs. I sense a new spirit in the Inner Voice of these creatures; they are taking a good look at the Uni-

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versal Song, and it is possible that they will begin to discern the place of the Hlutr in that Song.

Ah, here comes a child. No, my Little Ones, don't flee from him. Stay, and see how innocent he is. Mind, now, don't get stepped on.

Welcome, child. You children, sometimes, watch my colors with curiosity —perhaps *you*, lad, will grow up and retain your wonder at the pretty colors you watch so absorbedly, and will discover that the Hlutr actually talk.

Run along, now; my leaves quiver to the sound of your parents' voices, you must return to them. But . . . perhaps you will be back.

IV.

A terrible thing has happened, Little Ones, something which has shocked the Elders and the Hlutr of all the Galaxy.

Could I intercede for the Humans, I would. But I do not understand. Elders, Stars, Universal Song . . . *why?*

I of course never saw Credix, grand world that has now become one of the Provincial Capitals and a major military base for the Empire. Yet I have seen images of it still burning in the minds of those who visited. And I have sung the melodies of the Inner Voice with the ancient community of Hlutr who lived there.

Gone, gone. Not one Hlut remains on Credix. Few enough died directly from Human bombings—perhaps twenty times seventy. More Hlutr than that die naturally all over the Scattered Worlds each Terran year. But oh, twenty times seventy Hlutr in the middle of their lives, living fast or slow or in between, growing and sheltering—and all the Little Ones that dwelled with them. The backlash of the Inner Voice killed every other Hlut on the planet. Even on Amny, eight hundred parsecs distant, some of the frailer Hlutr died.

Why? you Little Ones ask. And why, ask my brethren from beyond the sky. Why?

Can I explain how important this Empire has become to these Humans of Terra? Can I explain how they have invested all their being into its realization, so much so that they are willing to deforest whole subcontinents to build spaceports? Stars and Music, how can I explain when I do not understand?

There are those of my brethren who wish me to take revenge. The way is clear . . . we Hlutr have taken it before. We alone of all the creatures in the Universal Song, we possess the ability to manufacture those helices of matter that are the very stuff and foundation of life.

I could . . . I could.

You, my Littles, could provide the basic materials upon which I could work. The Hlutr have guided evolution on seventy-times-itself-seven-times worlds, large and small. We possess the control to make you over, Littles, into beings that would have the means to kill every Human on this world. A plague, one of my brothers suggests to me—your little pulsing bits could be converted into other little bits that would spell the end of Humanity.

I could do it. It would require my death—that death-detonation which is the ultimate meaning of the Hlutr race, that last gasp that so few of us have ever really undergone—to spread the synthesized substances far.

I could. I will not.

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Listen to me, brethren. I plead for the Humans. They did not know what they did. It is *my* failing, for I have not yet been able to make them realize that we are sentient. Just as a Hlut does not hesitate to destroy a nonsentient plant that is in his way—so these Humans did not hesitate to destroy what they imagined to be nonsentient Hlutr on Credix.

Let me work harder, brethren, and let me make them see what we are. And then . . . then they will hurt us no more.

The Elders answer with a sigh that is both dirge and decision. Until I can do a better job, until I can convince the Humans that we are sentient . . . they will be spared.

A terrible thing has happened, Little Ones. Now the sap of all those Hlutr, all the forests of Credix and all the dead Hlutr beyond . . . are my responsibility. Ever in the Universal Song will my failure be noted, and ever will I be linked with Credix in the tales that will follow.

Ever.

V.

Winter comes . . . as it has come over three-times-seventy-times since I have been here. I have watched the leaves of the trees with which I share the Imperial Botanical Garden turn color and fall many times, and I shall never grow tired of the sight. It is a joyful vision, which we do not have on Amny; for Amny has no winter, only eternal spring.

The Humans also like to watch the leaves. They cannot guess that within those colors is preserved a genetic memory of the Hlutr spores from which these trees' ancestors of millions of years ago sprang. For the yellow-red-orange pattern of the leaves is the same pattern seen on a Hlut deep in communion with the Inner Voice, listening contently to the ebb and flow of tides from brethren Hlutr and from life the Galaxy round. It is the sigh of a Hlut experiencing the profound joy without which the Universal Song is toneless and without purpose.

These last few winters have been even more delightful for me. There are few of you about, with the snow gathering—and nowadays you tend to come near me less and less, for the Research Station's new building was put up less than five man-lengths from me, and many of you still fear to approach it.

I am left with the company of crawlers and grubs, and a few brave birds. You, birds, no longer nest in my upper branches—thirty man-lengths is a bit high for a nest—but I cherish your homes in my lower branches. I have cared for your young, as much as I am able; for the Hlutr *do* love you, Little Ones. Yet you feel that I am more distant from you than I have been in the past.

True, I have not spoken with you much. I have been very busy.

I have been living faster than I have ever lived, save for the hectic days of my saplinghood on Amny. It is necessary, you see, to live quite fast to keep up with Doctor Rubashov and the others of the Research Station. It is important to me, Little Ones, and important to the Hlutr as a race, that Doctor Rubashov be given all the evidence he needs to prove the Hlutr sentient in Human terms.

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I do the bidding of the Elders, in this and in all things. For this I was sent to Terra, for this I have stood in this Botanical Garden for Human centuries.

Now young Doctor Rubashov approaches, and I must concentrate all my energies on the seedlings' talk which we have managed to improvise in the First Language. His apparatus is all set up; I greet him.

"Good day, Doctor. Are you understanding me?"

A televisor screen flashes color-patterns at me. Were he to shout, I could understand his speech—in my time I have beome quite good at reading Human speech—but it is easier to use the First Language.

"I am reading you. Good morning. Are you ready for the day's experiments?"

"Certainly." To tell the truth, Littles, the prospect of another day of numbers and simple concepts, as if I were a seedling being taught by the Elders, is abhorrent. I don't mind living fast to talk with things, but I dislike doing it simply for numbers.

Before he starts the day's trials, Doctor Rubashov adjusts some of the leads which montior my biochemical states. When his hand touches my trunk I have a sudden flash of Inner Voice clarity.

"Doctor, you are disturbed. Why?"

"I've been working for two years to show that you are intelligent. I've convinced myself time and again, but the (something) are not yet convinced. With such slim evidence we won't ever be able to get the (something else) to recognize you as sentient. And that'll be the end of my career."

"Have you noticed how beautiful yon city looks all covered with snow? Does not appreciation of that beauty qualify me as sentient?" (You may wonder why we include appreciation of beauty and wonder in our definition of what constitutes sentience. Why, certainly one of the most important things we share with other sentients, Iaranori and Avethellans, Dophins and Metrinaire, even the poor children of Nepehestal—surely it is this ability to be profoundly stilled by the simple miracles of the Universal Song.)

"Well now, you may think so. And I may think so. But I don't think the (something) agrees. Now let's get started."

"But are the hills not beautiful?"

"I suppose so." He is still disturbed, and I cannot read his feelings well enough to do more than guess. I live more quickly and try to match my own chorus of the Inner Voice with his cacophony. There are shattered images—a Human woman, and unpleasent scenes of anger, and—but it all fades back into the private reaches of his mind.

"We have a lot to do today," Doctor Rubashov continues, "for we won't be able to work the next few days."

"Yes, of course. Let me wish you a joyful Solstice, Quen Rubashov."

"Where did you learn that?" He sends a quick wave of surprise in the Inner Voice out toward the stars.

"I have been here a long time. I have observed much of your race and your customs. Oh, and I have an important matter to discuss with you—in the spirit of Solstice."

"Go on."

"My brethren and I have noticed the new center for emotionally disturbed

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children that was built a few kilometers from here. Disturbances in the Inner Voice have made it difficult for me to communicate with my brethren Hlutr beyond the sky.''

''There's no way to have that center moved further away. How do you know about it? Has one of the techs . . . ?''

''You misunderstand, Doctor. No, I don't want the center moved away. If you will move the youngsters closer, I believe I can help heal them with the Inner Voice.''

There was a long pause. ''We'll see.'' Then Doctor Rubashov started flashing numbers at me. I settled down to a long day's work.

Little Ones, Little Ones, come close to me. How the wind rushes through my branches, how it shakes me to the roots!

How could he do it? No, Littles, I am not asking a literal question. I *know* how he could do it. He took a dropshaft to the top floor of the Imperial State Building and threw himself off. And after long seconds of freefall, Quen Rubashov was no more.

How? Why? Because his work was going badly? Because that woman left him? Because, because, because . . . a thousand so-called reasons beat in the minds of those on the research team. They have not told me yet—but there is no hiding it. I was attuned to his own theme of the Inner Voice. There was no mistaking his cry on Solstice Eve.

How could a sentient being do that? Littles, I fear I will never understand Humans. How can any living being embrace nonlife? How can it hate itself so much as to wish to be not-self? Make no mistake, my faithful simple Little

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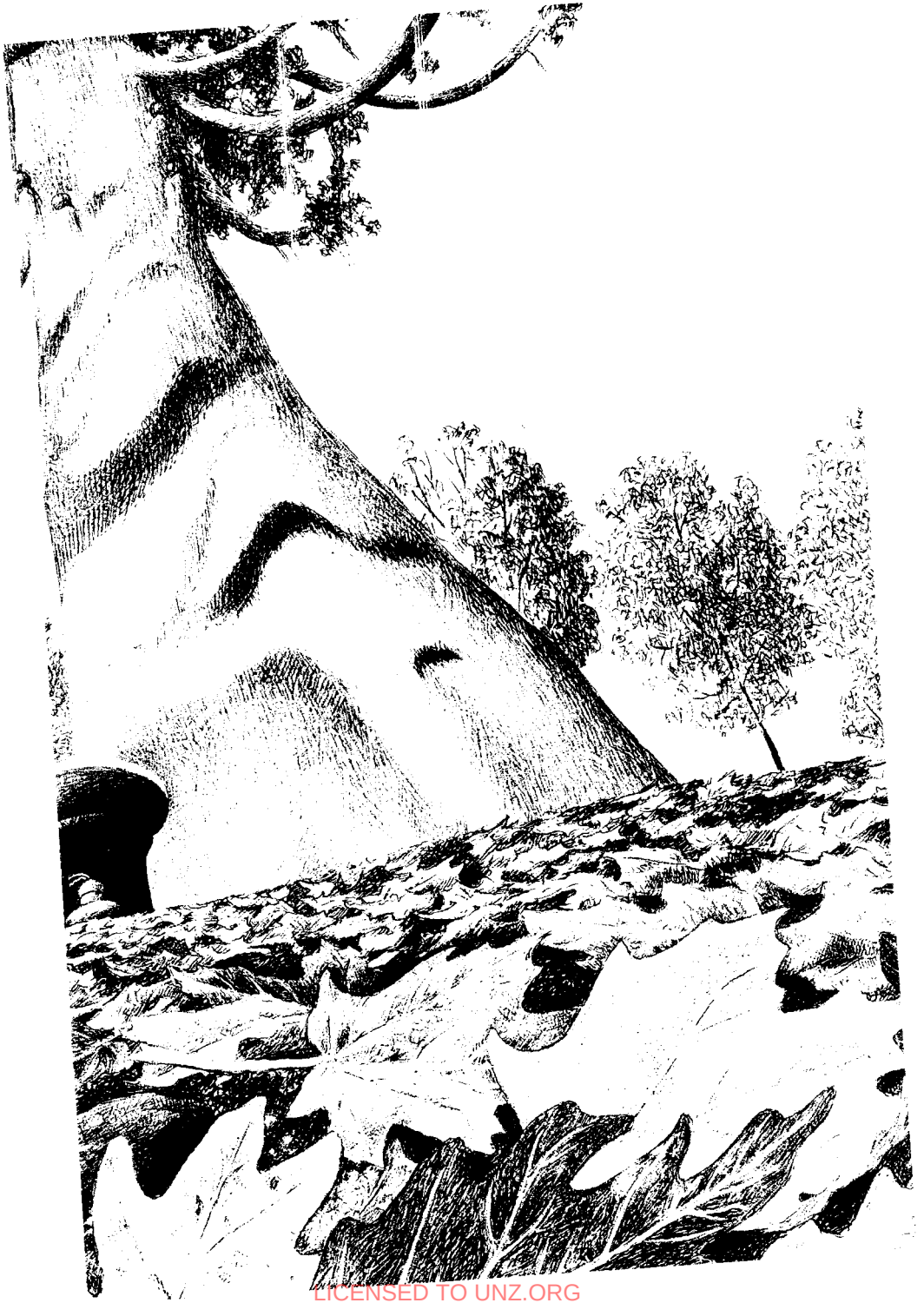

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Ones . . . what I felt in Quen Rubashov's mind that night was not only anguish, not only dread, but a feeling of welcome for the fate he had chosen.

How can an individual be able to perform such a supremely unsane act? How, when faced by all the wonders and mysteries of existence, can he choose to embrace its opposite?

One tiny voice in the Universal Song was stilled that night, Little Ones, stilled by its own hand because it preferred silence to the Song.

I do not understand.

Come closer, Littles, please. Feel the wind. . . .

VI.

Children are delightful, my Little Ones . . . their minds are almost as simple as yours, yet so very complicated at times. Through it all, though, they have an awareness of the Inner Voice like none I have seen in other Humans. The others call these seedlings disturbed. They cannot be aware that the disturbance stems in many cases from a talent for understanding the Inner Voice. They come to the Center, in the buildings of Rubashov's old Research Station, and they play with their blocks and toy trains and dolls; and all the time I soothe the raucous noise of the Inner Voice that they project. In time, many are cured and they leave.

The ones I like best, Littles, are those who are never cured. The ones who sit and stare deeply into my trunk and the patterns that race there, and who listen to the Second Language as if they could understand. Oh, they are bothersome, with their rages and hatreds and deep depressions. But there are times when the Inner Voice is at peace in them. Those times, I can almost get through. I send waves of the Inner Voice after them and they strain to hear.

Lately, I think a few have even begun to answer.

I must tell my brethren Hlutr. The Elders will be very interested. Maybe, even, the time will come when these children can cast ripples of the Inner Voice outward to other Hlutr.

Perhaps the nurses think that *they* are caring for the children, perhaps the programmers think that they have worked miracles. I know better. And more and more lately, I believe that the children know better too. When they look at me their eyes are bright and aware, and the Inner Voice sings. I am on the brink of communication.

In addition I have you, my Little Ones. For you must never imagine that I have forgotten you. Birds and ants and spiders and squirrels and worms beneath my roots, I remember and feel and cherish you one and all.

And I live for October each year, when the beautiful colors sweep through leaves around me, when I am reminded of my sapling days on Amny, and of other Hlutr.

I have not seen any of my brethren since Amny; had I stayed, I would have been surrounded by a forest of them. It saddens me a little, my friends. I have a mission, and I content myself with the sight of autumn and the remembered whisper of the Second Language. Humans have yet to find me sentient, and I have lately been much more content with autumn than with my mission. And, of course, with the children.

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I think little Chari Anne is trying to talk with me.

VII.

Chari Anne comes now, my Little Ones—I can feel her vibrations in the Inner Voice. You mustn't be afraid of her, nor of the tiny one she brings with her. She has learned much, in eight decades, of the way of the Hlutr and their concern for the other orders of life. Chari Anne cherishes you, Littles, as do I.

You see, she walks among you without harming even the smallest, projecting peace with the Inner Voice. She moves to the equipment that once belonged to Quen Rubashov, in the abandoned building of the Center for Disturbed Children. The children have been moved away, over the years, as Human psychologists learned more about the Human mind and began more and more to distrust this alien creature. I have felt loneliness, but I have at least been able to live a good deal more slowly. That is a good thing, for I am coming near the end of my span. I have always lived fast, however, when I am visited by some of the children from the old Center: Chari Anne, Staven, Daris, Kaavin, and the few others.

Chari Anne sits before the communication screen, holding a Human boy-child on her knee, and switches on the equipment. Since adulthood her command of the Inner Voice has been fading, and meaningful talk is now difficult without the equipment.

"Good morning," she says.

"Good morning, Chari Anne. Thank you for coming to see me. Are the leaves not beautiful?"

Her Inner Voice radiates warmth that I have learned to associate with her smiles. "Yes, they are. You always did love to see autumn leaves."

"I always did." She waits. I think she is tired, and I fear it will not be much longer before she passes out of the Universal Song. Once, Little Ones, I would have told you that this is the way of all creatures, except the Hlutr, who are so old they live hundreds of your lifetimes. Now, as I near the end of *my* time in the Song, I am not too sure.

"Chari Anne, who is the Little One you have brought with you? His mind is delightfully sharp."

"This is Elsu; he is my first great-grandchild. Elsu is Liene's son." Chari Anne is the progenitor of many Humans; she always brings the infants to me, and while they grow they are much in my company. As adults, they return every so often. I remember Liene as a child, Littles, and now Elsu gives me the same wondering look, coos in delight as I race patterns of the First Language up and down my trunk for him.

All my children from the Center—they all bring me their young ones. Were we to gather every one here on this hill, we could fill the old building to overflowing.

"What news do you bring of the others?" I ask.

"Daris has finished her major composition at last, and her troupe is touring with it. The show is very popular."

"Daris dances well." I do not tell her what I have seen in Daris's mind when she dances, for it cannot be put into words. It is a feeling of the Inner Voice, when all harmonies are matched and one

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is in union with the Universal Song. Daris feels it when she dances . . . and in Daris's children and grandchildren I have caught the same joyful melodies.

"Kaavin sent me a long holotape just the other day. He's at work in some far-off system, testing some theories he has about stellar formation or some such. I didn't completely understand what he said—but then, few enough of us ever understood Kaavin."

"He is happy."

"He certainly seems to be." Elsu imitates his great-grandmother and hits keys on the board; the equipment transmits a raucous squawk. Chari Anne feels my glee, and she laughs. Elsu chuckles as well. "Oh, Staven has some good news. Do you remember the problem he had with those Kaanese?"

I thought. Yes, Staven had told me just a while ago. Half a hundred nonhumans were trapped on a Human world, because their home was far across the border and a war was going on. Staven made it his lifework to study and help nonhumans. He'd been trying to find a way to get these Kaanese primitives home.

"He succeeded?"

"Yes. More than we hoped. Both governments made a truce across that border long enough to get the Kaanese back where they belonged. It's the first truce ever between Patala and the Empire."

"I am proud of Staven."

"We all are."

For a while neither of us says anything. This is fine, Little Ones, for I can feel Chari Anne's Inner Voice melodies, and I listen busily to and sing with the innocent song of Elsu.

Finally Chari Anne puts hands back on the keyboard. "I have news. I just learned yesterday. The Empress is going to sign the bill declaring Hlutr legally sentient. The Imperial Council passed it along with all the attendant protection laws. Staven's data and my own experiments convinced them at last." With the Inner Voice I can hear her listening. "What's wrong, aren't you excited?"

"I sigh, Chari Anne. Yes, I am excited. My brethren will be pleased to hear it. And yet . . . well, Chari Anne, I am not long for this world."

She is very concerned. "What's the matter? I thought that Hlutr lived . . . well, if not forever, at least a very long time."

"Again I sigh. How long we live depends upon how fast we live. The Elders, who are as old as my world, live very very slowly. Here on Terra, I have been forced to live very quickly. And I am nearing the end."

"I am distressed."

"Don't be. All that is mortal passes from the Universal Song. We must accept its passing."

The Inner Voice is disturbed with her rage, and it drowns out the background murmur of all the life around us. Even Elsu feels it. "Damn it, how can you be so philosophical?"

"A tender smile, Chari Anne. There is no other way. I have watched Humans die for four hundred years and more, and it has not upset me. I have watched the other orders live and die countless times since I arrived on Terra. The life is important, Chari Anne . . . but more important is the way it is lived. I have lived mine well." Again we say nothing for a time, while I use the Inner Voice

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to calm the seething storm of Chari Anne's mind. Littles, this is one of the jobs of the Hlutr. Being masters of the Inner Voice, we naturally try to use it to help others when we can. "Chari Anne, I would like it very much if you could do something for me. Now that the Empress is declaring us sentient, I will not be needed for study."

"I suppose not."

"Do you think that you and the other children—" (for I still think of Chari Anne and the others as the children they once were. The important part of them never did grow up and become lost) "—could arrange to have me shipped back to Amny, so that I may die among my own kind?"

Again her Inner Voice is in turmoil. "If that's what you want . . . except . . . Staven pulled a lot of strings to get those Kaanese home. Especially after Patala attacked Karphos. I don't know if he could get another truce so soon. He doesn't want to push things. If Amny is anywhere near the war zone—"

I am not ignorant of galactography, Little Ones, and I calm her fears. "Amny is near Credix, Chari Anne, across the galaxy from Karphos." The Elders are deeply disturbed by the destruction of Karphos and the progress of the Human war. There have been Hlutr killed, and their pain echoes yet on crests of the Inner Voice around the galaxy. And Humans have died by the millions, at the hands of their brethren . . .

"We'll do it. We'll have you taken back to Amny."

There is another long pause, and I look at the brilliant, joyful leaves of October. Soon I will leave you, Little Ones, birds and squirrels and insects and worms; I shall remember you fondly, and I hope you will remember me until your little lives are over. "One more thing, Chari Anne. Before I go, do you think it would be possible . . . for me to say goodbye to all the others, and their children and grandchildren?"

VIII.

Again I feel the soil of Amny below my roots, and again I am among creatures of my own type. True, Amny has the smell of Humans now; their city dominates the clearing where once a grassland stood in happy golden awareness. True, their airships drift through the sky bearing cargo, and their starships arrive and depart on a daily schedule from the spaceport. These changes cannot overcome the feeling of my home world.

For the first while, Little Ones, the world seemed wrong. I was too heavy, the air was too cold, the sun was not the right color. I learned to forget these minor differences. Amny, at least, has something Terra never did—the intelligible rustles of the Second Language, the colors of the First.

At my request the Terrans placed me in the middle of a group of Elders. They were impatient (insofar as an Elder can be said to be impatient) to learn of Earth and Humans, and I knew they would use the First Language. Had I been placed in my original spot, out of sight of the Elders, they would have been obliged to use the Second with its much lower information density.

I live slowly now, Littles, almost as slowly as an Elder. I tell them all I saw and felt and heard.

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They debate; the sun moves against the stars. A message comes through the waves of the Inner Voice, a message from the Hlutr ambassador to New York. Chari Anne has died. So, my Little One, I have outlived you. I am saddened, as no Hlut should be for the passing of a lesser order. I shall remember you joyfully and with wonderment, Chari Anne.

The Elders debate for seven years; near the end they are living almost as fast as normal Hlutr, and I am living almost as slowly as the crystalline Talebba. Finally one of them lives slowly enough to talk with me; he is the Elder who trained me, a lifetime ago.

"Brother Hlut," he says with the First Language across seasons, "we have debated with ourselves and with Hlutr on the other Scattered Worlds. The Inner Voice has been in turmoil with our discussions. And we have reached a decision." More of the Elders join us; and in slow pulsations of the Inner Voice I am aware that Hlutr Elders from all over the galaxy are joining this conclave. "I shall repeat our decision to you."

"Thank you, Brother Elder." I have trouble with the First Language . . . age is telling upon me. Is the sun shining? I feel so cold.

"You were sent to Terra, you know, for a mission. The Humans investigated you, and finally they judged you and the Hlutr sentient. That was not the purpose of your mission."

"This I have suspected, Elder."

"From what you learned about Humans, we must needs rule on their own sentience. We must rule on whether they present a menace to the Hlutr and other orders of life in the Scattered Worlds."

"Let it be so, Elder. For the Hlutr must protect life and the Inner Voice. So has it been since the first seed vessel of the Pylistroph (blessed be!) set forth into the Scattered Worlds, so shall it be when the last star dies." I am so cold. Chari Anne, will I see you when I die? Do Hlutr and Humans go to the same place when we pass on? Chari Anne, do we go anywhere?

"Then hear the decision of the Hlutr Elders. You have watched Mankind slaughter Hlutr. You have watched him slaughter other orders. You have watched him turn his back on the miracle of existence and slaughter his brethren and himself."

"This I have watched."

"You have seen that most Humans are nonsentient. You have seen that they do not appreciate the wonder of the Universal Song and do not even delight in their own lives."

"I have seen cases of this, Brother Elder. Many cases. But—"

"Hear then the answer of the Elders. Man is fundamentally a beast, we proclaim. He grew up on a world with barely any supervision of Hlutr. He destroyed the last vestiges of Hlutr control on his planet. And now he spreads through the stars with his strange unsane ways. Man is a beast—and a beast with too much power. He *does* represent a threat to the Hlutr and to life. And so Mankind will be destroyed."

Living slowly as I am, it is hard to feel strong emotions quickly. Yet the blast of impatience I sent out on the Inner Voice must rock all Hlutr on

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Amny. "Elders, you do wrong to decide this way. Let me be heard."

"Speak."

"Humans all start out as wonderers, as children delighted with every segment of the Universal Song. A few do not lose these qualities into adulthood. Whatever their ultimate fate, all men begin as sentients. On the basis of the potential that Humans show as children, and on the basis of those few who never lose that potential, I beg that Humanity be spared."

I feel no agreement from the Elders—only astonishment that I should speak this way. The one closest to me projects feelings that, in Humans, are associated with a sad shake of the head.

"Brother Hlut, you are blinded to the danger of Mankind. Look with me." He sings in the Inner Voice, a terrible song that I had almost forgotten.

Credix. A thriving planetful of Hlutr, and then came the bombs. To clear a spaceport, in the name of all the gods! The Elder sings me the deathsong of all those Hlutr, and it shakes me to the core.

Another Elder sings, sings of Laxus and Leikeis and a hundred billion Little Ones destroyed, fast or slow, by Human ecological meddling. And he sings to me the song of the Humans who did it—not even criminal, they were totally unconcerned.

And another Elder sings to me of Karphos, of great naval battles and of Humans killed, Humans suffering, Humans fighting Humans and glorying in the task. Of Human colonists on a thousand planets, colonists who delight in stripping whole forests, in slaughtering herds of animals, in hunting for the sheer pleasure of cruel destruction.

My teacher projects sadness. "*This* is the beast that you want us to spare, Brother Hlut? Because of a potential that may never be realized? How many more times does Credix have to happen, how many more Battles of Karphos must there be, how many Little Ones must die before you are convinced that we do right?" He addressed the other Elders. "The way is simple. We know Human biochemistry. We can construct diseases that will kill all Humans but spare other Little Ones. There are enough of us on Human worlds that we can strike before they even become aware of the danger. And then the threat of Humanity will be finished."

All that is mortal passes from the Universal Song, Chari Anne. There is no need to be saddened about that. Then why am I so unquiet? I am glad that you died, Chari Anne, before we could destroy your race. I only wish Staven and Daris and Kaavin, and all their children and yours, could die first as well.

I wish I could cry, Chari Anne, for the passing of Humanity.

I wish the Elders could have seen the wondering sparkle in your eyes.

"NO!" This time my Inner Voice roar shakes all life on the planet. Even the Humans feel it touch the edges of their minds. "Elders, hear me."

They sigh. "Speak," my teacher tells me.

What to say? "You tell me that Human potential may never be realized. That too few ever retain their original wonder and delight in the Universal Song. I say that you are wrong, Elders.

"I know Humans, Human men and women, who are entities worthy of Hlutr friendship. One of them, who just re-

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cently passed out of the Universal Song, was so alive with the glory of existence that she spent her entire life working so that Hlutr could be declared sentient."

"That is one case, Brother Hlut."

"Yes, Chari Anne was one woman. But when she succeeded, and Human beings realized we were sentient . . . then all of them ceased hurting us. One Hlut now stands in New York as ambassador to Humanity. Laws have been passed, Elders, laws which protect Hlutr in the future." I quivered. "For four centuries Humans thought us unintelligent, and so our deaths were to them little more than the passing of a grassland. I grant you that very few ever wondered, in that four centuries, whether we were intelligent. Yet when Chari Anne *did* wonder, when she and Staven proved us sentient—all other Humans agreed. Credix and Karphos cannot be erased, cannot be forgotten . . . but they will not happen again. And these are the creatures you call beasts?"

Another Elder sings, from kiloparsecs away, "Not just Hlutr are endangered by Humans. They fight among themselves, showing total disregard for life. Many of the lesser orders will be hurt, have been hurt already."

"Let me tell you of Human attitudes toward the lesser orders, Elders. The Kaanese are surely one of the least progressed races in the Galaxy. They can barely be said to have self-awareness and language. Yet my Little One Staven convinced Human governments to stop their war long enough to bring some Kaanese home. Staven is one man, one very exceptional man who has kept his own wonder and respect for other orders—but what of the diplomats, Navy officers, the Empress and the Patalanian President? They still have flickers of the innate and original goodness of the Human being."

This has been a long speech, Little Ones, and I am living far faster than I should. I cannot feel my upper limbs. Elders, Stars, Universal Song . . . do not let me die before I have pled my case.

"Let me tell you, Elders, of the wonderment that Humans retain for the Universal Song." I sing with the Inner Voice—I sing as Daris does when she is dancing. "This melody is one that is Hlut-flavored in all respects. Yet it originates in a Human mind. Do we have the right to destroy the mind that can produce that song?"

"Brother Hlut, you yourself guided that individual in her development. If she sings glorious melodies, it is because you taught her. Ordinary adult Humans cannot learn to sing such songs."

"No? Then listen with me, Elders, as Daris dances." I cast out with the Inner Voice, seeking a pattern I know so well. In a little while as we Hlutr count time, I find Daris and her troupe dancing before an audience of two thousand. "Listen, Elders, to Daris's Inner Voice. Then listen to the Inner Voice of those who dance with her. And listen to the Inner Voice of those who watch. Do you not hear the same theme repeated over and over? You say that I taught Daris to sing . . . who taught her audience?"

They listen, and they hear what I have described. And the tides of the Inner Voice that flow through this conclave begin to change.

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My teacher tries one more time. "Brother Hlut, all the arguments you have used depend upon the fact that you, a Hlut, taught these Humans while they were children. You could go through all the descendants of these Humans, and the answer would be the same: they are what they are because a Hlut taught them. Not because they live up to their potential on their own. In the four centuries you spent on Terra, you have managed to change only a small number of Humans. The vast majority of them are still a threat to the Universal Song."

Now I am saddened in a new way. One has respect for one's teachers, one always thinks that they are intelligent and worthy. It is a terrible thing to be shown otherwise.

"Brother Elders, can the Hlutr *not* try to help Humans more? Must we turn our backs on them and destroy them, when with time and teaching we might be able to help them alter themselves? The few Humans I have helped—who are now helping change others of their kind—show that progress is possible. Are we now to close our senses to that possibility, are we to deny to this order of Little Ones the help that they so plainly need, and so plainly can profit from?

"They had no Hlutr to help them when they were growing on their planet—now, when the job is more difficult, are we to put aside our ancient obligations and consign this entire order to nonexistence? Elders, I believe that the Hlutr are better than that. I ask that Mankind be spared."

Cold. I am so cold. I cannot see beyond this grove—I would have liked one more sight of the stars.

My teacher speaks slowly. "The Elders have made their decision, Brother Hlut. Hear it now. Man is a beast . . . but a beast with the potential to become sentient. Hlutr can help him to realize that potential. Therefore, Man will be spared, and the Hlutr will take up their obligation to work with him, that he may become more fully what he *could* be. Let it be so."

"Let it be so, Brother Elders. Brother Hlutr." I am cold, so cold. Chari Anne, are you there? It must be autumn, Chari Anne; look how my leaves are red and orange and yellow. Are they not beautiful, my Little One? Is not the Universal Song a grand and glorious thing, to have contained two such as we?

I always did love the leaves of October. ■

● The supreme trick of mass insanity is that it persuades you that the only abnormal person is the one who refuses to join in the madness of others, the one who tries vainly to resist. We will never understand totalitarianism if we do not understand that people rarely have the strength to be uncommon.

Eugene Ionesco

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"One minute to air."

Dr. Palmatier twisted in his chair, making a last vain effort to get comfortable. The chair, like most he had encountered on the chatter show circuit, seemed designed for the mythical "average American." His substantial physique felt wedged in.

So this was show biz. Big deal. He straightened the worn bush jacket that had become part of his mystique, took his pipe from his mouth, and put on his PR smile. It still hurt his face.

"Thirty seconds."

The swarm of activity around the other chair vanished miraculously, leaving the show's hostess radiating loveliness and sincerity. "Here we go, Doctor. I'm sure this is going to be fascinating."

What was her name? Barbara. Don't forget that—Barbara. And today it was Cleveland, Ohio. Blue collar. Ten-plus unemployment, so stress jobs. "Thanks for having me aboard," he said.

The last commercial vanished from the monitors, and the show's theme began. The studio lights came up, revealing the cattle-faces of the audience. These morning shows were the toughest—too many housewives.

"Welcome back to Cleveland AM," Barbara said, sparkling into the camera with the red light on. "Our next guest is Dr. James Palmatier, the director of NASA and the chief architect of the plan to stimulate economic recovery through commercial exploitation of outer space. Good morning, Doctor."

The applause was louder and more earnest than he expected, almost drowning out the scattered boos. He peered. There was a fair density of college-age faces amid the housewives'. He felt a bit more optimistic.

"Doctor, for the past two years the Administration has been promising a new era of prosperity from our dramatically increased space program. Billions of tax dollars have been spent so far, and many more will be—at a time of deepening economic woes. How much progress have we made?"

So it was going to be an adversary interview. He sorted through his finely honed stock answers for the most appropriate. "We've made two years' worth of progress. Benefits are already being felt. Those billions of dollars aren't being shot into space—they're being pumped into the economy, creating jobs."

"But when will we have the cheap and plentiful resources? The solar power satellites? The non-polluting space factories? The technological advances?"

"As you know, such things aren't accomplished overnight. But we're moving ahead as quickly as we can. The first of the new space shuttles capable of reaching the high geosynchronous orbits will begin flight testing in three months. The prototype SPS—Solar Power Satellite—is on schedule for launching next April. As more SPSes are added to the grid, more solar power will be microwaved to Earth.

"Modules are already being fabricated for the first orbital station. Besides serving as a relay for the SPS grid, it will be the core from which will grow communication, transportation, industrial, and scientific facilities. The spaceships that will bring the resources we so desperately need from the moon and beyond are well into the development

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stage, as are the atomic-powered ion engines they will use."

Barbara flashed her teeth. "It sounds like the stuff of science fiction."

"It is. As were airplanes, atomic energy—and television."

"Speaking of science fiction, you wrote some yourself earlier in your career. You were also a scientist and a teacher. Now you find yourself involved in politics. How has—"

"If you don't think I've been involved in politics in each of those avocations, you don't understand politics or me."

She paused for the mild applause to subside, then went on smoothly. "How has your multi-faceted background prepared you for your present role as the leading spokesman for the space movement? And your appointment as the director of NASA?"

"I happened to be the right man in the right place at the right time. I can't take any credit for the growth of the space movement—the thousands of intelligent, dedicated people who did the work deserve the honor. Like them, I contribute what I have to contribute."

"But what if something goes wrong? What if your space program fails? What happens to the poor and unemployed who will have no help, no hope because all the money went to NASA?"

He smiled broadly. "Ma'am, that question is so emotionally slanted against me that I can't possibly set the balances straight in the brief time available. I will just point out what your intelligent viewers already know—we don't need more welfare, we need more jobs. For which we need an economic recovery. For which we need the riches of space. We'll succeed because we have everything we need to do the job, and because we don't dare fail."

The loud applause led by the students warmed him. Barbara acquiesced with a dazzling smile and a change of subject. "You've brought us some marvelous tape of the latest shuttle mission. Would you care to tell us about it while we watch?"

"It would be my pleasure." He turned his head to look at her monitor.

Which is why he didn't see it happen. He saw her expression twist with surprise. Then he heard the shot—a light-caliber bark—and felt a tug at the right sleeve of his jacket.

The acquired instincts that had kept him intact during his Korean tour were still there. He almost yelled, "Incoming!" as he dove past Barbara, hooking her with an arm *en passant*. He landed behind her desk, and she came down hard on top of him.

A second shot dug into the desk's Formica paneling. He rolled the pliable female aside and peered around the side of the desk.

Needless to say, it was a noisy, active scene. Some people were screaming; more were shouting their confusion. The audience was frantically parting like the Red Sea. Moses, in this case, was a short, skinny young man holding an automatic in two shaking hands. The studio lights were coming up. He saw two rent-a-cops trying unsuccessfully to push through the human tsunami.

He wondered if the cameras were still broadcasting.

He ducked from another shot, a wide miss, and realized that the gunman was shouting at him. By straining his ears,

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he was able to make out the words through the din.

"I know what you're doing! You've sold out to them! I program accounting at the Painesville plant! I've seen it, and I can prove it! You've sold ou—"

Something with the strength of an eighteen-foot great white clamped onto his arm and yanked it (and him) offstage, away from the target range. He stood up painfully. Secret Service Agent Swan let go of his arm. The screaming and shouting were, if anything, louder, but there were no more shots. "What —?"

"No time, Doctor," Swan snapped. "Please come with me."

The tank-like agent hustled him along backstage corridors and past scurrying people. He let himself be led—a rare occurrence in his post-military life —because he knew an adrenaline high when he felt one and wasn't prepared to bet his life on his own judgment for a few minutes yet.

They crossed three quick strides of chill, raining Ohio autumn between the studio's rear exit and the waiting limo. He settled into the reassuring firmness of the back seat as the limo accelerated. The world beyond the windows became a rain-streaked blur.

"Are you okay, Doctor?" Ed Frey asked, briefly looking in the rearview mirror as he drove. He knew what had happened—Swan had filled him in by wristcom during the hasty exit from the studio.

"Out of breath, slightly bruised and extremely mystified. Otherwise okay. Where are we going?"

"Back to the hotel, unless you'd like to see a doctor first. Seems the best place to be until this mess gets sorted out."

"The hotel it is. Forget the doctor. Won't the police mind me leaving the scene? Speaking of which, did they get that head case?"

"I made good use of the car phone before you got here. The authorities know where to find you—I imagine someone will drop by to take a statement this afternoon. I'll move your schedule back accordingly. We'll have to draft a release to the media, and arrange to keep them off your back. The gunman was taken alive. No injuries. It seems he has taken a dislike to you for some reason."

"He convinced me." Palmatier was, as usual, awed by the semi-mystical efficiency of his aide. He tried to switch from visceral reaction to cogent thought.

What in hell's name had that been about? There were plenty of folks who violently disagreed with the NASA program—hence Mr. Swan's presence—and he had already encountered some. But the gunman's shouts hadn't matched any of the standard anti-space rhetoric. And the hate behind them had been almost . . . personal. An unnerving amount of passion to stir in a total stranger.

Data insufficient. Or, as a toy crystal ball had once told him: Answer cloudy, ask again later. He removed a beer from the tiny frig and shotgunned half of it. "Anybody up there thirsty?"

"Sure," Swan said cheerfully. Frey shook his head. Dr. Palmatier handed the agent a bottle, then turned his head to take in the scenery.

The rain undoubtedly added to the depressed look, but even under a sunny

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summer sky downtown Cleveland would have had the burned-out, abandoned look of a war-ravaged city. Which it was. An economic war, true, but no less deadly to the owners of the boarded-up stores, or the ragged figures seeking any shelter from wind and rain.

He felt the old familiar gut-rage at the fools who couldn't see. Otherwise, he could be supervising the program where he belonged, instead of on this selling tour.

The limo drove into the hotel's parking garage. Minutes later, he and his entourage reached their suite. He sprawled on the big sofa, more rattled than he cared to admit even to himself. Swan remained in the corridor to fend off the expected media onslaught. Frey sat in a chair. "Now what, Doctor?"

"You better draw up that media statement—we'll need it any second. Does the hotel know we don't want to be disturbed?"

"I'll get on it. Maybe you ought to fill in Mr. Lemon."

He reluctantly got up, took the comp from his pocket, and attached it to the phone and the TV. As Frey disappeared into a bedroom, he sat down again and said, "Phone to NASA Washington, Assistant Director. Scramble."

The phone beeped, crackled, and buzzed. The screen flickered polychromatically. Then Michael Lemon, seated at his desk, appeared in the screen and spoke through the phone's speaker. Like Frey, he had been with NASA before Dr. Palmatier's appointment and might similarly serve directors yet to come. The entrenched, unchanging bureaucracy; the real managers of the nation.

"Hello, Jim. I hear you had to dodge some bullets but came through okay. True, no?"

"Physically whole but mentally aboil. I want to know who and why."

"Isn't the why obvious? Depressed economy, high local unemployment, the big NASA budget, etc.?"

"Wrong scenario. The gunsel was a kid, one of ours. It sounded like he worked at a place around here doing something for us."

"What can I tell you? It's a strange, sick world."

"Have the police gotten anything out of him?"

"Not a word."

"That's odd. At the studio he was raving."

"He's being transferred to FBI custody. When they learn what's what, I'll let you know."

"Do that."

"Are you up to continuing the tour? Maybe a few days—"

"Hell with that, Mike! I didn't want to go on this roadshow in the first place. But if it must be done, let's get it done. While I've got you, how about running the daily update?"

"Okay." The screen went green; then graphs, memos, and summaries began rolling across it. Dr. Palmatier watched the unfolding picture of the current status of the program with rising anger. When it finished and Lemon reappeared, he erupted. "Dammit, Mike, who's handling those subcontracts—the KGB?"

Lemon went a bit pink around the collar, but otherwise kept his bureaucratic cool. "I'm riding herd on them as best I can. But it's like lopping heads off the hydra—solve one problem and

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three more crop up. Remember, this is a crash effort to bring new large-scale technology on line. Problems there will be."

"I've seen more glitches than you have forms, but this takes the gold-plated monkey wrench. Delays. Overruns. Sub-spec deliveries. Plain old foulups. What the hell is going on?"

"Business as usual for the federal government, I'm afraid."

Palmatier almost snarled. "Every pig in the aerospace barnyard must be bellied up to this trough. I can tell you one thing from personal experience—a lot of the money never makes it from the executive suites to the jobs."

"Like I said, business as usual. We do what we can, but with cost-plus contracts, that isn't a hell of a lot."

"Keep on them. 'Bye."

"Good-by, Jim. And be careful."

Palmatier told the comp to end the call, then sagged back bonelessly and let his eyes close.

He wanted to take a nap, but sleep wouldn't come. Something was kicking around in his back lobes. So he emptied his consciousness and free-associated.

He opened his eyes and sat up sharply. "Phone to Washington. NASA records. Voiceprint identify and scramble."

A few seconds later, the familiar pseudovoice said, "Dr. Palmatier, your access clearance has been established. Proceed."

"Do we have contract work being done by a firm located in or near Painesville, Ohio?"

"Yes. Bro-Tan Industries."

"What do they do?"

"Bro-Tan Industries is developing SPS ground-station rectennas."

"Run their whole file starting from day one."

The screen flickered, then went dark. "Unable to comply," the pseudovoice said.

"Why the hell not?"

"System malfunction. Do you wish to be notified when it is corrected?"

"Yes, dammit." He disconnected the comp, put it back in his pocket, went over to the bar and poured a beer. He drank, paced, and thought, no longer a bit tired.

What the hell was going on? Datum: A kid claims something rotten is going on with a NASA subcontractor and accuses him of selling out. Datum: Said gunman is collected by the FBI with amazing celerity and questionable jurisdiction. Datum: The record computer has a "malfunction" when asked about said subcontractor.

Conclusions: None. GIGO. But he was enough of a suspicious SOB to want to pursue it. And he had a strong notion how to do so.

The rest of the day and evening passed slowly. He tried to nap but was too tense. The police came for a statement, which he gave quickly and concisely. He approved Frey's media release. The three of them had a room-service dinner, then he caught up on paperwork until bedtime.

Frey and Swan retired to their bedrooms; Dr. Palmatier didn't. He put on his coat and left the suite—quietly.

He should have known better. As he headed down the hall, Swan came running up, pulling on his coat. "Going somewhere, sir?"

"Yes. Alone, preferably."

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"Come on, sir, you want to put me on unemployment? I'll drive you."

"Okay. Come to think of it, a full official presence might be useful. We're going to visit Bro-Tan Industries in someplace called Painesville. Think you can find it?"

"If it's on the map, sure. But we're a little late for business hours."

"They better be working three shifts —we're paying for them. And no calls to Ed or anybody."

They rode an elevator down to the garage. "You're being pretty mysterious, sir," Swan said. "Anything I should know?"

"Not yet. This could be one big snipe hunt, or it could be what I'm afraid it might be. Either way, the less said, the better."

Swan looked thoughtful. "Painesville? Isn't that where the gunsel—"

"Yes, it is."

"Oh."

Swan figured out how to get there, and the limo moved with an eerie vibrationlessness through the cloud-blackened night. Bro-Tan was about forty minutes away. Dr. Palmatier made good use of the time by calling up all the update data on Bro-Tan in his comp's two-week memory.

There was surprisingly little. They were past R-and-D and into actual construction of the first batch of rectennas. But they were months behind schedule. They were inhaling money at an awesome rate, considering that the rectennas were barely begun. The more he studied the figures and graphs, the more they emitted a faint aroma of dead tuna. But he couldn't pin anything down with the data available.

That would soon change.

The Bro-Tan plant was brightly floodlit and surrounded by a security fence. Swan drove up to the gatehouse, and a cold and unhappy guard stepped out. "Gate pass," he muttered.

Palmatier opened his window and spoke into a bitterly cold breeze. "Please call your shift supervisor, manager or whatever. Tell him Dr. James Palmatier is here to see him. The Dr. Palmatier who authorizes Bro-Tan's NASA contracts, without which this fine old firm would join the dodo bird and Chrysler Corporation."

Two minutes later, they were ushered through the gate and directed to the administration building. The night supervisor, a Mr. Haberman, met him in the lobby to welcome him profusely—and with understandable nervousness. Swan followed with his usual diffident alertness.

Mr. Haberman's office was tastefully opulent, and quiet with the serenity of late night. When they were seated and warming up with cups of coffee, Dr. Palmatier cut through the conversational amenities. "Do you have a young man in your accounting department who tried to gun me down on local TV this morning?"

Mr. Haberman showed little surprise at the question. "A most unfortunate incident—the police and the FBI have been in and out of here all day. I'm very glad you weren't hurt." He smiled charmingly. "I assure you, Mr. Rasokat's action in no way reflects Bro-Tan company policy."

"I sure as hell hope not. I'm here to try to find out why he had it in for me."

"I'm sure the FBI will—"

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"The FBI doesn't have my strong personal interest in the case. Can you tell me anything?"

"Nothing that will enlighten you, I'm afraid. Mr. Rasokat was a quiet, hard-working employee, very talented with the computers. None of his coworkers had any hint this was coming. But madness often works that way."

"He was mad, all right. Angry clear through. He shouted something about a sellout. Something he discovered here that he thought I was involved in."

He watched Mr. Haberman's face carefully, but the supervisor wore an expression of thoughtful innocence—real or feigned. "We're doing a complete audit of our books, of course, to see if Mr. Rasokat or any other employees have embezzled funds. So far, nothing has turned up."

Dr. Palmatier decided to try another angle. "Seeing as how I'm here, how about a tour of the rectenna assembly operation? I'm kept so busy with the damned 'big picture,' I rarely get to see any of the hardware."

The supervisor's pause was barely noticeable, but interesting. "Certainly, Doctor. There isn't much happening at this hour, but it would be my pleasure to show you what I can. Would you mind waiting in the outer office a moment while I make a few calls—the shop people like advance warning of VIP visits."

Dr. Palmatier paced the reception room impatiently while Swan tried to initiate a conversation with the secretary. But he didn't have time to make any real progress before Mr. Haberman came out. They took a short but uncomfortable ride across the Bro-Tan compound in an open electric runabout, to an elephantine, but otherwise nondescript, metal building.

The inside was a single vast assembly shop with office partitions huddled in one corner. The overhead fluorescence was bright, and the noisy activity of half a hundred workers hammered at his ears. The activity centered on three of eight work bays, in which the tinker-toy shapes of rectenna units were in partial being. The scene was impressive, but disturbing in a way he couldn't pin down.

"Exciting, isn't it?" Mr. Haberman shouted over the din.

"Very."

"You can feel the dedication of our employees. They aren't punching a timeclock—they're building the power sources for America's recovery. Come on."

They spent a half hour walking through the shop, talking to line supervisors and engineers, observing the work. He enjoyed talking shop instead of budgets and politics for a change, but his unease was growing.

When they returned to Mr. Haberman's office for another warming round of coffee, the supervisor said, "I'm sorry it had to happen this way, but I'm glad for this opportunity to show you our operation. We've had a terrible stream of glitches to overcome, but we're proud of the progress we've made. And your visit will be a real boost morale-wise."

"Glad to oblige. Maybe you can help me out."

"If I can, sure."

"I'd like to take a quick look at your

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books. Just the parts involving your NASA jobs."

The eager-to-please smile froze in place. "That's . . . a rather extraordinary request. May I ask why?"

"Amateur detective work. I'd like to see if there's anything there that would send a man gunning for me."

"I certainly understand your concern. But I'm sure you realize any company's business records are extremely private and sensitive. I don't have the authority to permit that, I'm afraid. You should contact our president or—"

"Why make such a big deal of it? I'm here now. Just let me tap into your computer for a minute, check a few things out."

"I'm sorry, but I can't do that. It could cost me my career."

Dr. Palmatier yawned. "All our contracts specify that an authorized agent of NASA may inspect pertinent records at any time. You know that."

Haberman paused and Dr. Palmatier could almost hear the gears turning frantically. "At any time during normal business hours. If you'll wait until morning—"

"On this project, normal business hours are twenty-four hours a day. Let's quit dancing. Or do you have something to hide?"

"Of course not. I resent the implication. Very well; if you'll wait in the outer office while I make a call, I'll see if I can get an authorization. Though I must confess, I don't understand your insistence on this matter."

Back to the outer office they went, and Swan went back to work on the secretary. Palmatier sat sipping coffee and fighting back sleep. He was beginning to have second thoughts. So far his midnight raid had unearthed nothing tangible. If he came up empty, he could turn the problem over to in-house investigators or GSA. But what could he do about the worry-mice running around the back of his mind?

Mr. Haberman finally emerged, smiling sincerely, and Palmatier knew he was about to lie. "It's all arranged, Dr. Palmatier. Come with me, please."

"Where to?"

"The accounting department. The information you want to see is there."

Dr. Palmatier was pretty sure the information could just as easily have been punched up on the terminal on Mr. Haberman's desk. As they walked along the empty, dimly lit corridor, he whispered to Swan, "Look alert."

Swan nodded.

Their route brought them to the building's lobby. Three men were waiting for them.

Two were large, anonymous men in dark overcoats. He pegged them at a glance as professional arm-breakers.

The third man, standing a step in front of them, was Ed Frey.

"I found you had left the hotel, and became worried. So I tracked you here." Ed Frey was as unruffled as ever. "Would you care to tell me what's wrong?"

"And if I don't?"

"I really should know."

"Is that why you brought Punch and Judy with you?"

Ed Frey said nothing. Mr. Haberman retreated nervously from the scene.

It had been neatly choreographed. Haberman's phone calls, the stall, and the accounting department snipe hunt.

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Whatever was going on, Ed Frey was in on it. Palmatier would have been concerned if he wasn't so mad.

"I'm looking into a large-scale ripoff involving the Bro-Tan contracts," he said levelly. "And maybe others. Care to save me some digging and 'fess up?"

"I can't do that. But I can take you to the person who can. In fact, that's why I'm here."

"Do I have a choice?"

"I hope you aren't going to make this difficult."

Swan took a step forward. Ed Frey said, "My associates are armed. Please, let's have no violence. I know how this situation looks, but you mustn't do anything hasty until you learn the facts."

"Wouldn't it be simpler to drop us in the river—if you can get us through the ice?"

"If that were true, we wouldn't be having this conversation." Ed opened one of the glass doors. "After you, please."

A big dark car was waiting. Dr. Palmatier and Swan got into the back seat, between the two thugs. Ed Frey drove.

"Care to tell us where we're going?" Palmatier asked.

"You'll know soon enough. We have a long trip ahead of us. I think it would be best if you arrived relaxed and refreshed."

One of the thugs had eased something from his coat pocket. Palmatier caught a brief glint of metal, felt a hard coldness press against his bare neck, and—

He woke up slumped in a leather easy chair, in an old and elegant room. He blinked away a slight grogginess; whatever they had hit him with had no apparent lasting effects. He looked around, recognized the three people seated facing him, and got the biggest shock of his eventful life.

The room had at one time been Herbert Hoover's library, and later John Kennedy's private study, but now it was an office. The thick drapes were closed; lamps sent out shadow-twisted yellow light. The three men were seated in easy chairs like his.

President Nivling, old, overweight, but still charismatic, smiled reassuringly and said, "I apologize for the way you were brought here. Fortunately, you're a man who thinks logically even when you're angry. You've met Vice President Huddy and Treasury Secretary Murphy, I believe."

Dr. Palmatier got ready to lunge for the door. Out into the public area of the White House, lose any pursuit amid the tourist hordes, escape the grounds and call the *Post*.

"Don't bother," the president said mildly. "There are marines on duty in the hallway. Besides, you must be curious about what's going on."

"I'm groggy, hungry, and my clothes are developing a strong personality. How about some breakfast and a chance to clean up first?"

"Soon enough. I don't have much slack in today's schedule. I have to get some things said quickly." The president paused. "I considered bringing you into the picture when you were appointed. But the fewer people who know a secret, the better it keeps. Now you've started worrying a loose thread; you've forced our hand."

"How much money have you

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skimmed from the NASA budget through creative accounting?''

The president nodded to Secretary Murphy. The middle-aged woman coughed and said, ''To date, approximately nineteen point six billion dollars have been diverted.''

Almost half the budget! ''For the love of heaven, *why?* Are you trying to set the world record for embezzlement?''

''To save the nation from total economic collapse, of course.''

''That's what NASA is going to do, if you'll stop gutting it!''

The president took a deep breath. ''No. Your program has been nothing but a shell game from the beginning. And you've been the shill.''

''What?''

''Consider the situation when I came to office. Energy and resource shortages, growing unemployment, a recession heading into a depression; all in an accelerating, downward spiral. Unstoppable because not enough people were willing to take the bitter medicine necessary to stop it. Instead, they dreamed of pie in the sky.

''So I decided to make use of the popular support for the space movement. There were more prosaic projects that might turn the economic tide, expensive projects Congress wouldn't fund. A ground-based solar/electric power system. Total recycling of garbage. Efficient scrubbers to allow more coal-fired electric plants. Synthetic nitrates for fertilizers. Petrochemicals from crops. A practical battery for electric cars. Modernizing old factories. New sources for strategic materials. And so on. Eighteen in all. That's where the money is going. In a couple more years these private enterprise efforts will be paying for themselves, and the tide will begin to turn. Until then, the seed money is vital.''

''But . . .'' It took Dr. Palmatier a moment to digest the data. ''But why go to all the risk of this gigantic fraud? The space program we've laid out will accomplish everything you want for the country, and more.''

''No, it won't. Not a chance. It's technologically feasible, true—but politically impossible.''

''That's ridiculous! We have plenty of popular support, all the funding we need!''

''For the moment. But not for long. Even now that support is draining away. People aren't motivated by logic; they want quick-fix solutions to problems, and become disenchanted when they can't have them. Already there are calls from labor and minority groups to reduce NASA funding in favor of 'social programs.' Congressional elections are coming up. Cuts will be made. And your own figures show that anything less than the full program won't turn the tide in time.''

''I don't believe even the American people can be that stupid.''

''You don't want to, and I can't say I blame you. I'm not going to try to sell you. I'm going to let you do that yourself.''

''How's that?''

''I've had a suite prepared for you. Your clothes and personal things, room service, and a computer terminal. Take all the time you need. You'll have access to all the raw data—surveys, analyses, projections, etc.—that forced us to form this conspiracy. You're an in-

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telligent, pragmatic sort of idealist. And too much of a scientist to hide from the truth."

"What do you want from me?"

"We'll discuss that at our next meeting." The president rose. "Come along."

The suite was large, comfortable, and unobtrusively escape-proof. After Palmatier confirmed those facts, he showered, put on clean clothes, ate a hearty meal, then turned his attention to the terminal.

For an hour he tried every trick he knew to access any outside communication line. But someone smarter than he had made that impossible. Then, reluctantly, he began studying the problem posed by the president.

Hours later, too exhausted to continue, he went to bed. But he returned to the terminal immediately after a light breakfast. His thoughts weren't on what was going to happen to him, or what was happening in the world beyond the suite, or anywhere else except on the dream that was crumbling in the small color CRT screen. On the tour he had sensed growing doubt and anger, but rationalized them away. Now the shadows were taking solid, undeniable form.

This time only the president awaited him in the somber office. He sat in silence for a while, until the president said, "You've peeked into our crystal ball, Doctor. What did you see?"

Palmatier was tired. All hope had been steamrollered out of him. "What you knew I would. About the space program, at least . . . your scheme is by no means a sure thing."

"It's all we have."

"What happens to me now?" Dr. Palmatier asked, although he had trouble stirring up any real interest. "Obviously, you don't want me sharing your secret with the media."

"One possibility is for you to disappear. We maintain a secluded facility where we protect certain key witnesses and isolate certain people with dangerous information."

"I'm a little too well known to just vanish."

The president smiled wickedly. "Really. You can discuss the question with Jimmy Hoffa if you take that route. But you won't. I have something much worse in mind for you."

Palmatier paused before asking, "What might that be?"

"I'm a politician. I deal in compromise. You're a man of integrity and dedication to your dream. I'm going to use the latter to destroy the former. I'm going to corrupt you. And when I've done so, I won't need a truth detector to confirm it. I'm a master of the sorry art."

"Corrupt me?"

"You're going to become a member of our conspiracy. The front man. You'll go on selling the space program to the nation while we go on skimming the funds."

"The hell I will!"

The president's face was wrapped in shadow, except the clear, probing eyes. "Indeed. And why? Because that way there will at least still *be* a space program. A shell, yes. But you will get to build your advanced shuttles, SPSes, space factories, and so forth. In time, if we succeed and the economy recovers, the shell will become the real

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space program you envisioned. It'll have to—space is the only arena left in which our economy can grow dynamically.

"But if we fail or are discovered, there will be no space program. Pat Gronert will become the next president, and you know he'll scrap the NASA budget to help finance his 'social programs.'

"So, Doctor, are you willing to dance with the devil?"

Palmatier got up, went to the window, and looked out at Washington's evening face, the lights and cars and wind-stirred trees. Then up. Up at the clear black heavens. The stars were like diamonds on velvet. The moon was new, and Venus sat on the horizon.

If the NASA program were discredited and destroyed, mankind would never get out there. Soon the world's depleted resources would allow only bare subsistence—if that. Mankind would live and die trapped on the skin of a minor planet circling an undersized star in the outskirts of an undistinguished galaxy.

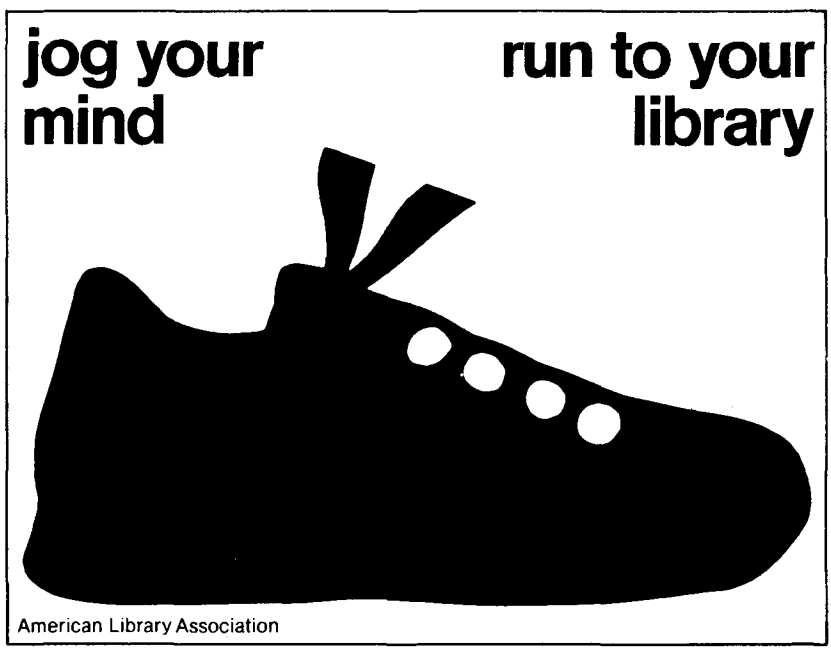
What was a little thing like personal integrity compared to that?

Bottling up his rage, he turned back to the president. "Do you get some obscene pleasure out of this sort of thing?"

"What do you think?"

"Put on your damned music. I'm ready to dance."

"Welcome to the club." ■



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brass tacks

Dear Dr. Schmidt,

Mr. Johnson's letter in the October issue concerning the unpronounceability of certain authors' made-up names reminded me of my first day in class as a Peace Corps Volunteer in Cameroun. I began by calling the roll and that turned out to be no easy feat. There were fifty names, and I doubt that Mr. Johnson would consider any of them "pronounceable." My students (who had no problems saying their own names) considered my tonguetied efforts hilarious and added to my confusion by insisting that two names with the same spelling be pronounced differently because their owners were from different tribes. Since then my views of what the human speaking apparatus is capable of have broadened.

By the way, I hope someone has pointed out to Mr. Johnson that Frank Herbert did not make up the names in *Dune* but used Arabic, which most Arabs consider quite easy to read and pronounce and whose spelling system is more phonetic than ours.

Most readers of science fiction and fantasy appreciate its mind-stretching qualities. Strange, alien names are useful in reminding us that the majority of people on this planet do not have English speech habits, and it is doubtful they will in the far future or on distant planets. As a matter of fact, non-English speakers would be quite as perplexed about how to pronounce the "h" in Mr. Johnson's name as he is concerning initial "Mn" . . . a combination which occurs in many Bantu languages in this area and whose pronunciation depends upon the speaker's tribal origins.

One solution would be for writers to use the international phonetic alphabet. Unfortunately, few readers are trained in its use, and most would be more upset to come across a /mɪsət : mæθju:/ than a Mr. Mnankrei. Another drawback to using a phonetic alphabet is that it lacks "color" and masks many useful connotations. A name such as Mnankrei tells us at once that this man's ancestors were not English-speaking, just as a name such as Beaulieu would hint at French origins. A creature called ZRRFT would be an extraterrestrial, gifted with a non-human speaking organ. The possibilities are infinite and too interesting for writers to ignore.

I do not think that the readers who are able to accept space vehicles that travel at speeds faster than light (though no author has yet produced a working model) are being imposed upon when the characters in a story have names which do not fit current English spelling habits. Each reader is free to adopt the pronunciation which best suits him. Who is to tell him he is wrong? However arbitrary his choice may be, in the far future it may have become standard!

In pronunciation there is no right and wrong, only currently accepted usage in a given locality among a given society. A young African girl I knew returned to her native land after several years' study in France with a beautiful upper-class Parisian accent, only to be ridiculed and ostracized by her French-speaking classmates, who considered her manner of speaking pretentious. So

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please, Mr. Johnson, allow writers the same freedom in choosing names as you would permit them in choosing a character's physical attributes. And since we may be dealing with non-human aliens, the range is vast indeed!

JUDITH DUBOIS

Kribi, Cameroun

Dear Mr. Schmidt:

I would like to know when and where "The Management Dictionary" by Kelvin Throop III was published. Also, any other works by Kelvin Throop III would be of interest to me! Thank you very much.

M.T. NOWAK

West St. Paul, MN

Well, er . . . uh . . . the Throops have always been pretty slippery characters, you know, and we don't actually know *who his publisher is. He just sneaks in at night from time to time and leaves a fragment on my desk, and sometimes I publish it. You will be hearing more from him, I'm sure. . . .*

Dear Mr. Schmidt,

It was a little strange to read the first page of Joseph Delaney's story (in *Analog*'s October 1982), whose near-future was very short of large meat animals since it was no longer possible to get cheap petroleum-based fertilizers for growing grain for fattening cattle, hogs, etc., when I had just finished G. Harry Stine's essay which told us that 47 percent of the world's land is rangeland (i.e., not suitable for cultivation).

It is no secret that cattle do not require fattening on grain. There are a few ranches now in operation whose cattle feed on grass alone. The meat is less marbled with fat, thus not as tender, but appropriate preparation and cooking takes pretty good care of that. I daresay there could be plenty of cattle raised on that 47 percent.

Moreover, beefalo (⅞ cattle, ⅛ bison) have been successfully bred and are now grazing on ranges which are rather too rugged for standard beef breeds. These hybrids mature more quickly, their meat is equally or more tender, and because their coats are denser they thrive in very cold climates the other animals do not do well in.

And if you're looking for cheap fertilizer, you don't have to look much farther than the backside of your cow.

JANE REED

707 E. Orange Grove Blvd. #17
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Joseph Delaney replies:

Space in "Brass Tacks" being limited, let's take a shortcut and make Ms. Reed work. She should bear the following points in mind as she reads the rest of the story:

1) Stine refers to the world, not just the U.S., and percentages differ.

2) Rangeland also differs. So does the vegetation on it. Goats, sheep, and camels can graze where cattle can't. We're talking about beef.

3) Stine refers to present conditions; not conditions forty years hence, as I am.

Whether large-scale meat production disappears from the American scene forty years from now, or sometime later, it will disappear, and my guess as to why and when is as good as anybody's.

Only countries rich in empty lands can afford to raise cattle, because these animals are inefficient producers of food, particularly protein. And when compared to smaller animals, such as goats, sheep, fish, and poultry, require large amounts of long-term capital to be invested. And the smaller animals, in turn, are less economically efficient than plant sources such as soybeans, peanuts, and potatos.

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Profit motives, which impel the producer to gain the highest yield he can from his investment in land and money, will dictate the use. Market conditions, which impel the consumer to get as much as he can for what money he has, will dictate his choice.

Meat, as it becomes scarce, will increase in price and cease to be competitive, except as a luxury, the way it already has in much of Europe and most of Asia. Importation of meat from countries like Australia, where the Loose Caboose got its steaks, will add to the cost and reduce its competitive position for the consumer's money. And Australia's day will come too.

Let's go on to the buffalo. Buffalo once roamed south Texas, where I live, and where cattle now roam. I like buffalo (read luxury) meat, and have crunched my share. It may well be superior in taste to beef. I will concede that buffalo don't have to have grain, though neither do cattle.

Now, you'd think there ought to be a reason why a large, tasty meat animal who was already on the scene, free for the taking, and well adapted to the environment gets wiped out and replaced by expensive, less hardy, and inconveniently located cattle; and there is.

The buffalo couldn't be domesticated. He's big, mean-tempered, unpredictable, difficult to confine, picky about his forage, and hard to transport and herd. That thick hide makes him impervious to ordinary barbed wire, so it's expensive to confine him, both for that reason and for the reason that you've got to supplement his diet if you do. His digestion is less efficient than a cow's.

You can still hire cowboys here in Texas, and they don't mind working cattle. Tell them you want them to care for buffalo and watch them run. They know buffalo are DANGEROUS. The way to get your buffalo-burger is to shoot it, from long range, with a bullet the size of a banana. Rope one? Brand one? Forget it.

Cattle, having been domesticated, will probably not become extinct. At least, not as long as man has a use for them. But in 2020 there may be as few of them in the U.S. as there are buffalo today.

Perhaps Ms. Reed will write a story and give me a shot at her. You will note that she is repeating the steps I took, and which got me into the business.

JOSEPH H. DELANEY

Dear Stan,

I read Ron Lambert's letter in the January *Analog* with interest. I quite agree that most people are decent human beings, and are better able to take care of themselves than people in government think. But . . .

Decent and capable is not the same as intelligent. Intelligent, as contrasted with instinctive or imitative, behavior seems all too rare.

Consider the word problem problem.

As a math teacher, one of my jobs is to try to teach students to solve word problems. But students seem to fall into two clear-cut classes. A few students solve word problems quickly and easily. They were not formally taught to solve word problems. They have been able to solve them for as long as they can remember. The majority of students fall into the other class. They cannot solve word problems at all.

I have never seen a verifiable case of someone who "has trouble with word problems" learning how to solve them. A student can certainly be taught to solve a particular type of word problem: mixture problems, for example. But

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when given a problem of a new type, even of a type closely related to one they know how to solve, they are at a loss.

I am not saying there is no way to teach word problems. I have not given up yet. I am saying that none of the methods currently in use work. In particular, the method of breaking up the problem of solving word problems into easily digestible bits does not work.

I can teach anyone who is not mentally handicapped to do calculus, but word problems—that is something else again.

And yet, what could be more important than teaching people to think. So I keep trying.

How can people who can't solve word problems hope to solve reality problems? In a word problem, you are given all the data you need. You are not usually given extraneous data. And there is a single, simple answer. In reality, the data you need is inaccessible, often nonexistent. You have a flood of data that is irrelevant or false. The solution is apt to be complicated, usually a choice among several imperfect alternatives. The "solution" may be to realize that there is no solution, and to go on to something else.

I wish there were more people capable of solving reality problems. We need all we can get.

RICK NORWOOD

Wayne, NJ

Dear Dr. Schmidt,

I thoroughly enjoyed your January editorial, "Those Nasty Ol' Censors." I taught geology and paleontology for some thirty-plus years. Science evolves like other things. Twenty years ago if I had been interviewing for a teaching position in North America in Geology and had been asked if I believed in continental drift, I would have been shown the door if I had said yes. Ten years ago the reverse would have been the way things were and are. When I was young, there was no convincing mechanism for the drifting of continents. Today sea floor spreading is a reality, and a lot of our problems on the distribution of ancient animals have been solved.

Between 1970 and 1980 I taught physical geology three times a year, back to back with a wonderful colleague. We had a great deal of mutual respect, we used the same course outline and, as the students were mixed in the laboratory, we had to cover the same things at the same time. However, Tim would spend several hours on the atomic structure of minerals, while I'd give it fifteen minutes and spend a couple of hours on the development of the geologic time scale. We were putting our beliefs out front and emphasizing the things we thought were important. All of our people came out with a good background in physical geology.

Some years ago one of the most prominent advocates of "scientific" creationism (a contradiction in terms) spoke to a group of geologists in Palo Alto, California. He was smart and he was glib. However, I don't believe that I have ever listened to a more intellectually dishonest person. He would warp evidence and deny things that we paleontologists had known for years. These people take the small things that we argue about among ourselves and use this as evidence against evolution.

One neat thing is that the Flat Earthers have a better thing going for them than the Creationists. The entire Bible is a flat Earth book, while only the first part of Genesis is concerned with creation!

J. R. MACDONALD

The Flying Aepinacodon Ranch
Rapid City, SD ■

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15–17 July
OKON83/FILKON EAST (Oklahoma SF conference) at Excelsior Hotel, Tulsa. Guests of Honor—Larry Niven and Jerry Pournelle; Artist Guests of Honor—Dell Harris and Real Musgrave; Fan Guest of Honor—Marty Burke; Filkon East Special Guest—Bob Maraschiello. Registration—$8.50/3 days or $5/day until 30 June. Info: OKon, Box 4229, Tulsa OK 74104 (include SASE).

15–17 July
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16–17 July
SPACE ATLANTA '83 (Pro-space SF-related conference) at Georgia State University's Urban Life Conference Center. Info: Calvin Bobbitt, SPACEWEEK-ATLANTA, 2947 Main Street #4, East Point GA 30344.

29–31 July
LICON (relaxacon) at the Holiday Inn of Hempstead, Long Island. Info: MFWSFA, P.O. Box 1037, Denville NJ 07834.

5–7 August
STARCALL (Space-oriented conference) at Rosslyn Westpark Hotel, Arlington, Va. Science fiction and space workshops, talks, exhibits, films, video, gaming. Registration —$20 until 1 August, $25 at the door, $12/day. *Info: International Star Foundation*, 225 Church Street N.E., Vienna VA 22180 (include SASE). 703–281–2711.

1–5 September
CONSTELLATION (41st World Science Fiction Convention) at Baltimore Convention Center, Baltimore. Guest of Honor—John Brunner; Fan Guest of Honor—Dave Kyle; TM—Jack Chalker. Registration—$15 supporting at all times. Attending—$50. This is the SF universe's annual get-together. Professionals and readers from all over the world will be in attendance. Talks, panels, films, fancy dress competition, the works. Join now and get to nominate and vote for the Hugo Awards and the John W. Campbell Award for Best New Writer. Info: ConStellation, 41st World Science Fiction Convention, Box 1046, Baltimore MD 21203.

12–14 September
IEEE International Conference on Computer-Aided Design at Santa Clara, Calif. Info: IEEE, 445 Hoes Avenue, Piscataway NJ 08854.

23–25 September
INVENTION (Glasgow SF conference) at Central Hotel, Glasgow. Guest of Honour —Chris Boyce; Fan Guest of Honour—Jim Barker. Registration—£11 attending, £5 supporting. Info: 10 Woodlands Gardens, Bothwell, Glasgow, G71 8NU, Scotland, U.K. (use airmail).

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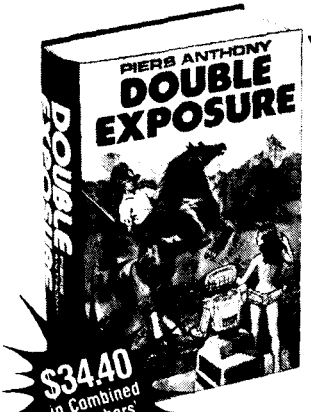

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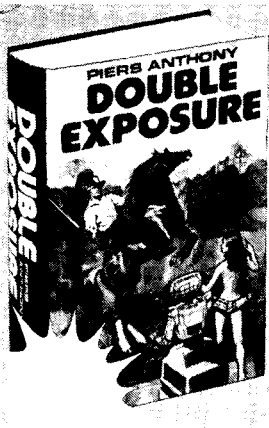

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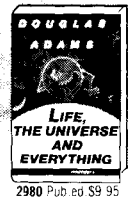

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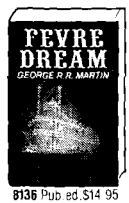

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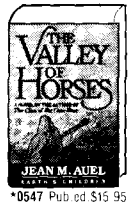

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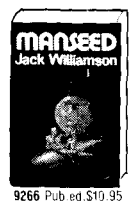

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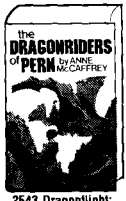

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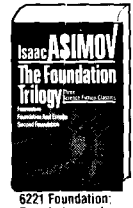

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